THE BUILDER

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Raising the Assuan Dam.

IN several previous occasions we have pointed out the enormous advantages to be secured for Egypt by the increased storage capacity of the Assuan reservoir contemplated in the project now in course of execution.

The dispatch of Lord Cromer dated March, 1907, gives full information regarding the monetary value of the returns anticipated on completion of the works in four or five years' time. For the moment we need only add the remark that sufficient water will then be available for the irrigation of nearly one million acres of land now lying waste in the northern part of the Delta—this reclaimable area being equivalent to an increase of about one-sixth to the land at present under cultivation in Egypt.

Although Sir William Willcocks, the original designer, has always contended that the dam as it stands is quite strong enough to bear heightening without any increase of breadth, the Egyptian Government have decided to add a strip of masonry to the downstream face throughout the entire length of the structure.

The reason for this precautionary measure is to be found in the advice given by the late Sir Benjamin Baker, from whose plans the detailed drawings were prepared by the reservoir staff. We are inclined to accept the views put forward by Sir William Willcocks as to the safety of raising the dam without increasing the breadth of its cross section. But, on the whole, we cannot avoid the conclusion that in a work of such tremendous importance to Egypt, and to other countries financially interested on a large scale in that land, the prudent course is to be on the safe side by a very wide margin.

There is no doubt that such a margin is provided by the design of Sir Benjamin Baker, and the fact that the project has been accepted implies no reflection on the ability or judgment of Sir William Willcocks.

Briefly described, the scheme provides (as shown in Figs. 1 and 2) for the addition of new masonry to the thickness of 5 mètres and the height of 5 mètres above the existing work, but arranged so as to permit water to be held up 7 mètres higher than at present. It provides for a corresponding increase in the height of the navigation locks and the construction of an additional lock as indicated in Fig. 3.

To overcome structural difficulties anticipated as the result of variations of expansion and contraction due to differences of temperature in the new and existing masonry Sir Benjamin Baker decided that the new work should be separated from the original face of the dam by a space of 15 centimètres and that the new masonry should be supported in the predetermined position by steel rods of $1\frac{1}{4}$ in. diameter. While transmitting the weight of the added masonry these rods will compensate for differences of expansion and contraction. Finally, when the engineers have reason for knowing that the temperatures of the old and the new work have become equal, the intervening space will be filled in with cement mortar.

A good deal of preliminary work was necessary in the way of excavation and stone-quarrying before a start could be made on actual construction, and it is anticipated that the final completion of the works will not take place before the year 1912. The total cost, including compensation for inundated property and grants to the archæological societies, is estimated at 1,500,000*l.* (Egyptian).

The increased height of the dam will have the effect of raising the storage capacity of the reservoir from 980 million cubic mètres (about 215,000 million gallons) to 2,300 million cubic mètres (about 500,000 million gallons), thus making the capacity about two-and-a-quarter times that of the reservoir as it now exists.

The influence of the reservoir already extends for a distance of 225 kilomètres (about 140 miles) up the Nile, but without inundating any of the temples save those in the vicinity of Assuan. When the dam has been raised the full reservoir will affect the level of the river for the distance of some 295 kilomètres (about 185 miles).

Fig. 4 is a longitudinal section of the Nile from Assuan to Wadi Halfa, showing the levels of water in the river at low Nile in the reservoir at existing height, and in the reservoir after the dam has been heightened. The section also gives the names and indicates the levels of the principal monuments along the banks of the river.

The temples of Philæ will be submerged to the further depth of 7 mètres, and the Temple of Debod, now just reached by the waters of the full reservoir, will be similarly affected. The small Roman Temple of Taifa, at present 1 mètre above the water, and the Temple of Kalabsha, built in the reign of Augustus, will both be inundated. The only other important monument affected is the Temple of Dekka, the most ancient part of which dates from the time of the Ethiopian King Ergamenes, and the more recent portion from the days of the Roman Emperors. This ruin will be submerged to the extent of about 2·2 mètres when the enlarged reservoir is full.

Of course it must be understood that various smaller relics will be periodically covered by water, and that houses and other property on either side of the Nile will be absorbed into the reservoir.

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FIG. 2. CROSS SECTION OF SOLID DAM

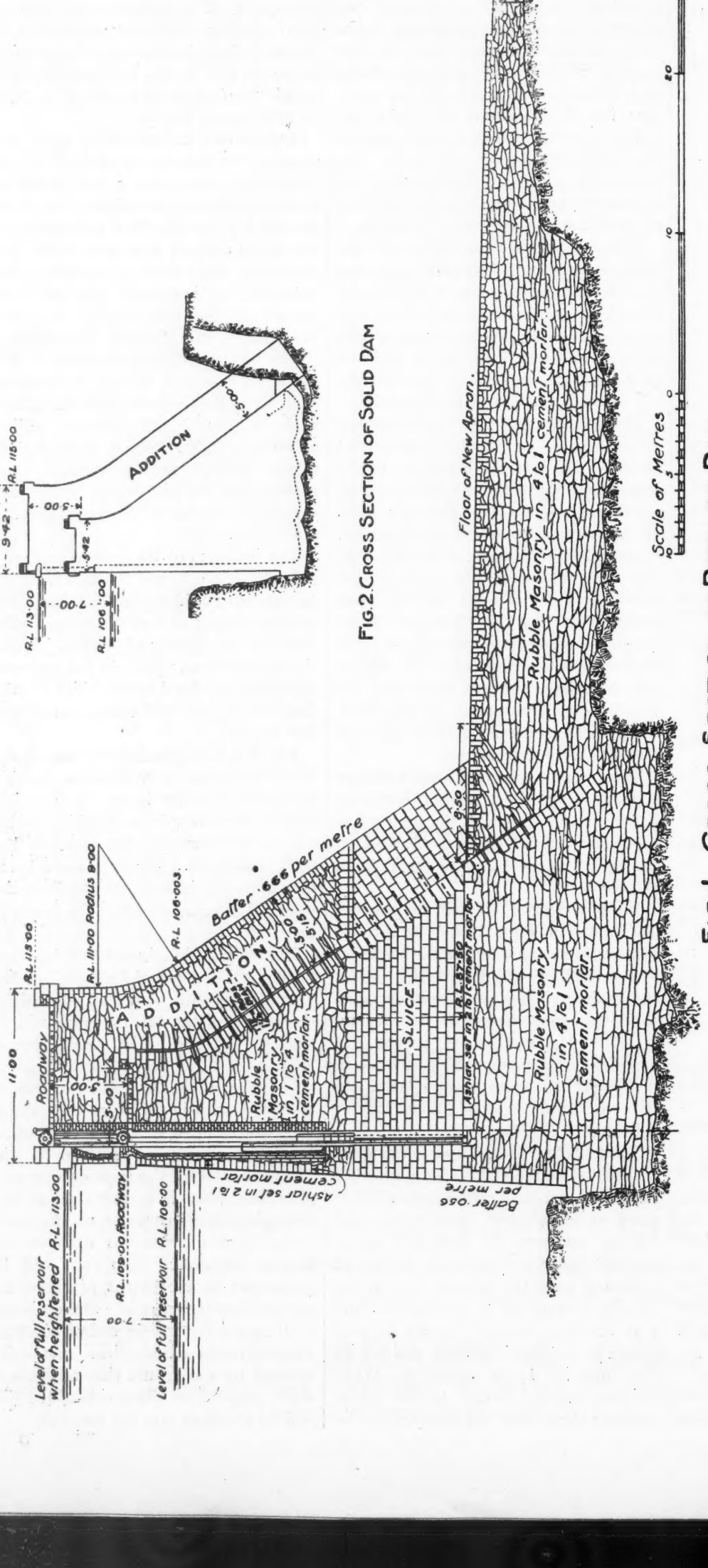


FIG. 1. CROSS SECTION OF PIERCED DAM.

Recognising their duty as custodians of the Nubian monuments, the Egyptian Government have granted the sum of 60,000*l.* (Egyptian) for the consolidation of the structures affected and for a detailed archæological survey, to include a close examination of every cemetery within the area influenced by the raised water-level.

It is satisfactory to know that Professor Maspéro, the Director-General of the Antiquities Service, has been consulted on all points connected with these matters, and that the same eminent archæologist has undertaken to perform all work necessary for the repair and consolidation of the monuments affected.

JAMES LEWIS.

IN the records of XVIIIth century architecture mention may be found, in the latter part, of a certain James Lewis, an architect of considerable importance in his own day, yet whose very name now lies forgotten, the works to which it belongs not having been stamped with an individuality strong enough to keep the author's name alive. Born about the year 1751, apparently at Brecon, in South Wales, Lewis was a contemporary of Gandon's, though a younger man by some nine years. Little is known of his early life and studies, nor are we aware that any but meagre details of his personal history are now ascertainable. One may, however, fairly estimate the value of his career by reference to his book of designs, his executed works, and the various semi-public appointments that he is recorded to have held.

The first volume of his "Original Designs in Architecture" was published in the year 1780, and from the long and somewhat imposing list of subscribers to it it would appear that Lewis must have entered his profession fortunate in the possession of influential friends. It is possible that he may have studied his art in Italy, for the letterpress is written both in Italian and English, and the names of several of the former race occur in the list of subscribers. But this evidence is really very slight, for writing in Italian was in any case a mere affectation, born of the prevailing taste for Italian architecture, and one to which Lewis, judging his character from his

designs, would especially be prone. The preface, too, contains no reference to the nature and whereabouts of his studies, while the introduction is merely a slight general treatise upon architecture, of no particular interest, save in a somewhat tentative plea for a less rigid adherence to the exact proportions of the classic orders. Of the designs themselves the greater part are, as is natural in the case of a young man not yet thirty years of age, mere paper exercises to show off their author's skill. The majority of the projects are for country villas of moderate size—one for Hadleigh in Suffolk was evidently a commission—and are chiefly remarkable for their dignified and well-ordered planning. In accordance with the ideas of his time, Lewis paid careful attention to the grouping of his apartments in a grand manner, thinking more of mere appearance than of the niceties and conveniences of domestic routine. He was not, however, a great sinner in this respect, and his interiors are certainly more home-like than his exteriors, some of which fail through a mistaken ambition to erect Italian villas in England. His personality was apparently not a strong one, and he was much influenced by the mannerisms of the brothers Adam. But he had the saving grace of good sense, and so his architecture, though never great, was always free from triviality and extravagance.

The second volume of designs was not published until seventeen years after the first, and it is interesting to observe the effect that these intervening years had upon his work. This time there is no Italian in the letterpress, and the introductory essay contains far more individual thought and criticism than appeared in the author's earlier effort. He now protests far more loudly against would-be originality than he previously pleaded for novelty in architecture; while his designs, mostly for actual buildings in all parts of England and Ireland, show the influence of the Adams gradually becoming superseded by that of Sir William Chambers. The designs are not for villas only, but also include a market and a theatre for the city of Limerick and a lunatic asylum for Old-street, Clerkenwell. The latter, however, was not carried out, and the existing

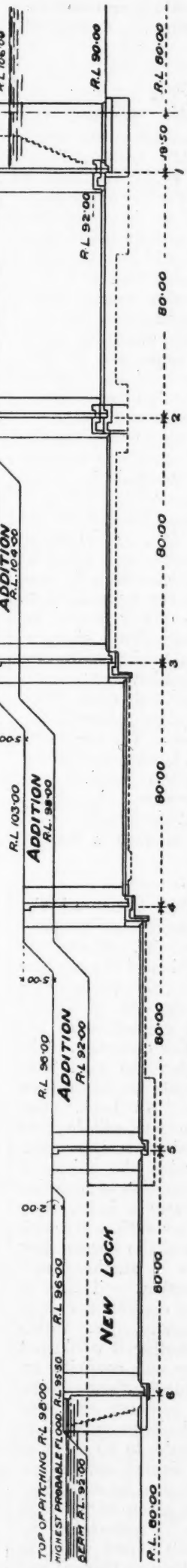
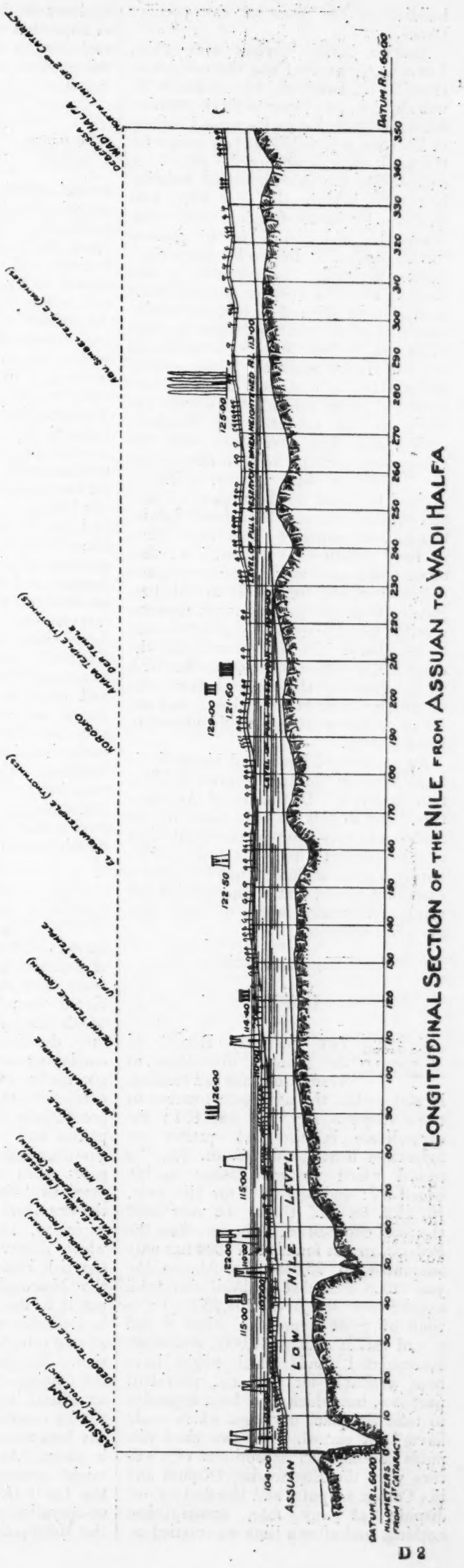


FIG: 3. LONGITUDINAL SECTION OF LOCK.



LONGITUDINAL SECTION OF THE NILE FROM ASSUAN TO WADI HALFA

building is the work of the younger Dance.

Another lunatic asylum with which Lewis was connected was the Bethlehem Hospital at Lambeth, but although he was appointed surveyor to this institution some four years before the second volume of his book was published, no design for the work appears among the plates. A competition for this important building had been held in the year 1776, and was won by James Gandon. For some reason he was not asked to proceed further, and, according to his biographer, James Mulvany, its execution "was handed over to another person, some man of mere lath and plaster, one wholly incompetent to produce designs or plans of his own." Now, Mulvany's statements are not always implicitly to be trusted, but whether he is strictly accurate here or not, it seems evident that a start was made in the execution of Gandon's design, and that after some years the Committee, perhaps because they found the "lath and plaster" man a failure, decided to throw up the original scheme, and obtain fresh ideas from James Lewis; Gandon, of course, by that time being in busy practice in Dublin. Whether or no Lewis made any use of the original design it is now impossible to tell, but, judging from the building itself, it seems possible that the general disposition may be Gandon's. On the other hand, the dome and entrance portico, together with all the details of the design, betray none of the Dublin architect's vigour, and are far more like what one would expect in Lewis's work.

An account of Lewis and his works is to be found in the Architectural Publication Society's "Dictionary of Architecture," and to this we refer those of our readers who may desire further particulars of this architect's life. He died in 1820, hardly a great architect, but yet after a successful career, and having carried out many architectural works of more than average excellence.

NOTES.

The General Federation of Trade Unions.

THE quarterly Report of the General Federation of Trade Unions is sad reading. It states that the aggregate number of trade disputes for 1908 was 897; the expenditure in the last quarter on federation benefit, 70,386*l.* 0s. 9d., "a record which no one desires to see equalled"; and the total for the year, 137,152*l.* 6s. 4d. Up to the year 1908 the total expenditure on benefit since the Federation was founded in 1899 has only amounted to 35,548*l.* 9s. 2d., so the year 1908 exceeded in itself the total expenditure by over 101,600*l.* In a time of great depression what a sad record this is! This 137,000*l.* represents accumulated funds which might have been available for sick and provident purposes, but which have been expended to take the place of wages which could have been earned. The two chief disputes causing this exceptional expenditure were the Engineering Dispute and the Cotton Dispute, and the first-named dispute, at any rate, accomplished nothing, and after a time was carried on contrary to the delegates' advice. Let us hope that conciliation will avert any such records in the future, and obviate this useless expenditure in a time of dearth.

The London Topographical Society.

OUR list of meetings for next week includes the announcement of the tenth annual meeting of the London Topographical Society, on Friday the 19th, at the Lecture Theatre, Burlington-gardens. Lord Rosebery, the President of the Society, will receive members and their friends at 4 p.m., and will take the chair and deliver the annual address at 5 p.m. An exhibition of London prints, maps, and views will be arranged in the tea-room. We draw special attention to this meeting, which we hope will be well attended, as the work of the London Topographical Society has not hitherto received by any means the extent of general and public support which it ought to command. The Society was founded for the publication of material illustrating the history and topography of the City and County of London from the earliest times to the present day, by the reproduction of maps, views, and plans of London and of localities within its area at different periods; the publication of documents; and a yearly record of demolitions and topographical changes. The Society is engaged in the publication of a complete set of London maps, views, and plans in facsimile, so that every period and every change of importance may receive illustration. The constantly increasing changes in London streets and buildings, which, unless watched and recorded, tend more and more to confuse and obliterate the past history of the city, render the labours of such a Society doubly valuable.

The Bermondsey Gas Explosion.

FROM the verdict of the jury in the coroner's inquest held by Dr. Waldo, it appears that the ignition of the mixture of coal gas and air in the Grange-road sewer was due to the use of lighted tarred rope by the employees of the South Metropolitan Gas Company. The jury do not consider the men thus employing naked lights to have been criminally negligent. We hope, however, that this occurrence will lead to precautions being taken by gas companies and others with the object of guarding against the ignition of explosive gases when repairs are in hand. Our previous "Note" deals sufficiently with the structural aspects of the Bermondsey explosion, but there is another point which deserves attention, and that is the risk involved by disused sewers in the Metropolis generally. Dr. Waldo put it to the jury whether it would not be desirable to fill up such conduits, or, at any rate, to provide for their ventilation. The jury in response expressed the opinion—with which we agree—that an official inquiry ought to be made as to the condition of disused sewers, and the best means of preventing explosions in them. An investigation of the kind might appropriately be undertaken by the Local Government Board with the co-operation of the County Council and the Metropolitan Borough Councils.

The Galerie des Machines, Paris.

A DEFINITE contract has at last been entered into for the removal of M. Dutert's great steel structure erected for the machinery section of the 1889 French Exhibition. There was a scheme for rebuilding it at Issy as a pavilion for military exercises; another for rebuilding it at Neuilly as a hall for agricultural exhibitions; both schemes had their supporters, but apparently both have fallen through. At all events, by the end of the year the Galerie des Machines will have disappeared from its present site; it has been put up to auction at a starting price of 400,000 francs, and has been acquired by M. Bonhomme, a contractor for public works, at the price of 625,000 francs. By its removal we shall lose (unless it is set up again on some other site) one of the finest modern examples of steel construction on a great scale; but its interest is solely constructional; the garish decorative treatment of the end elevations, in colour and gilding, is vulgar and commonplace, and seems out of place in Paris; and moreover, it shut out from the view from the Champ de Mars one of the finest buildings of the later French Renaissance — Gabriel's Ecole Militaire, which will now take its former place as the architectural finish to the scenery of the Champ de Mars. On the whole, we may agree that the great steel structure has been there long enough, and that its removal is an architectural blessing. Would that they would also put up to auction the Eiffel Tower!

The Title "Builder" in Germany.

UP till lately in Germany anyone could style himself a "builder." This, however, has been changed since October 1, 1908. On that day the law came into force (enacted May 30) which provides that no person may style himself "builder" who has not received authority for so doing from the State. At present only those persons already holding the title of "State builders" are thus qualified, but when further conditions have been settled it is to be presumed that provision will also be made for those who have not passed Government Examinations, such as architects and engineers. This new law was promulgated in order to prevent the abuse of the title "builder" by such persons as were not qualified to style themselves "master mason" and "master carpenter," both protected titles. Whoever wrongfully styles himself "builder" will now be punishable by law. The designations of "architect" and "engineer" are not similarly protected; only a certain amount of protection is afforded by the law relating to unfair competition. The law does not aim at protecting the title, but in some cases does so incidentally by prohibiting the assumption of the titles "architect and engineer." It concerns those cases in which, for the purpose of competing, some unqualified person adopts the designation. The injured party may bring an action against such a person, demand damages, and require him to be prohibited by law from using the title. The law is unsatisfactory and needs revision, for while it can prevent a contractor from using the title "architect,"

his junior employees are free so to do, because they do not compete with independent architects.

Electric Power Supply. THE Cantor lectures given by Mr. Addenbrooke at the Royal Society of Arts, on "Electric Power Supply in the United Kingdom," are of great interest to the electrician. Data are given concerning the costs of distributing mains and generating appliances, which are known to very few, and a general *résumé* is given of the position of the industry in this country. We were sorry to hear that in the open districts overhead mains were now largely used and that pressures up to 30 kilovolts were employed. As the cost of overhead wires is supposed to be only about half that of underground cables it is not surprising that they are used wherever permission can be obtained. The lecturer advised that the overhead wires should always, when possible, be arranged in loops so that every consumer could be approached in two ways thus obviating the risk of an entire breakdown when a fault occurred in the overhead system. The possibility of a fault occurring in the high tension wires would be rather an alarming thought to anyone who had occasion to go in their neighbourhood. Several years ago we pointed out that high tension underground cables could be considerably reduced in price if manufacturers would only take the trouble to study the best ways of "grading" the insulating materials used in accordance with scientific principles. We are glad to notice that one firm of cable manufacturers has taken up the problem seriously and is prepared to quote prices for graded cables which will be comparable with the prices charged for overhead wires. We regard the latter as merely a temporary makeshift which ought not to have been permitted by the Board of Trade. No one can say that lofty structures every fifty yards, supporting clumsy wires are beautiful, and everyone must admit that they are dangerous. The lecturer dwelt on the great legal difficulties connected with obtaining a Provisional Order for the supply of electrical energy. He ought also to have dwelt on the ease with which legal permission for erecting high tension overhead wires can be obtained.

Paint for Structural Steel. WE have received a copy of a paper read by Mr. Gaston Depierres to the Paint and Varnish Society, in which the author presents notes on steel, rust, the cleaning and painting of steel, and the testing of paint. In the early part of the paper we find a suggestion that the collapse of Charing-Cross Station may have been due to deterioration encouraged by lack of protective material. This, of course, is quite wrong, for, as shown by our article and "Notes" at the time, the mishap in question was clearly the result of an originally defective weld in the wrought iron tie-bar of one roof truss. There are many useful hints in the section of the paper devoted to "Paint and the Painting of Steel." While accepting the statement that paint-making has become an exact science, we cannot disguise the fact that a perfect medium, capable of withstanding the penetration of moisture, still remains to be discovered. When such a medium has been found the operation of protecting steelwork will be very much simplified, although the need for the conscientious application of paints and proper treatment generally will be as important as ever.

The Purification of Water by Ozone. THE *Journal* of the Royal Sanitary Institute contains a paper by Dr. Samuel Rideal giving particulars of apparatus used in France for the purification of water by the ozone process as well as various chemical and bacterial results obtained by the author. These are useful for purposes of reference, and the paper generally is of importance to those who are concerned in the purification of water for public supplies. Dr. Rideal points out that, assuming sterilisation to be as practically possible in England as in Paris, there is a considerable saving to be effected in London. Supposing the ozone process to be adopted, storage reservoirs for purification would be unnecessary, and the rates of filtration might be increased. It is clearly the duty of every waterworks engineer to make careful study of the ozone process, which seems to promise purer water supplies and to reduce the heavy outlay hitherto necessary in constructive works. All towns drawing water from rivers are practically subject to conditions equivalent to those prevailing in Paris, and the reasons commending the ozone process to the authorities in that city are equally applicable. Moreover, ozone might be found of special value in places where the conditions of supply involve the taking of water from wells, which may be liable to occasional or periodic pollution.

Honours to an Aged French Architect. THE town of Chartres is preparing to make a little celebration, on the 18th inst., in honour of the hundredth birthday of Mr. Charles Victor Famin, an architect who obtained the Prix de Rome in 1835, and is the oldest living recipient of that distinction. The street in Chartres in which he has lived for fifty years is to be renamed after him. The father of M. Famin, who was also an architect, was thought highly of by Napoléon, who entrusted him with the restoration of the château of Rambouillet. The present bearer of the name was a pupil of Vaudoyer. He has lived a life of devotion to his art, and at the age of ninety-seven was elected a corresponding member of the Académie des Beaux-Arts.

Paul's Cross, London. THE Court of Common Council have authorised the Dean and Chapter to proceed in terms of the bequest of the late H. C. Richards, K.C., who left 5,000*l.* for the restoration, or a memorial, of the Preaching Cross at St. Paul's. Mr. Reginald Blomfield's designs, as modelled by him, consist of a wall, set round a podium having sculptured figures of children; the podium is at the base of a column surmounted with a gilded or bronze statue, 9 ft. high, of Paul the Apostle, to be erected upon or near the site of the original cross. That site, lying close to the north-east angle of St. Paul's, is plotted upon the plan published in the *Builder* of January 2 last; it lies in the old burial-ground of St. Faith's. The foundation-stones, laid octagon-wise, were discovered some years ago by Penrose when the graveyard was laid out as a public recreation garden. The later XVth century pulpit was constructed of timber, raised upon stone steps, and having a leaden conical roof or canopy, surmounted with a small Latin cross. That site lay near "the shrowds," a shelter along the north-east side of the former cathedral, and was a trysting-place for folk-motes and similar assemblies of the people. There is mention of the cross in 1191 when William FitzOsbert, or Longbeard, declaimed there against the right divine of kings. In course of time it became the place for denunciations, abjurations, promulgation of Bulls, etc. Its use for the Sunday forenoon sermons and inflammatory harangues began at the close of the XIIIth century. After its injury by lightning in 1382 Thomas Kempe, Bishop of London in 1448-82, rebuilt the cross, which, until its demolition, 1643, by order of the Long Parliament, served for the delivery of discourses. Good views of the cross will be found in Henry Farley's "St. Paul's Church: Her Bill for the Parliament," 1621; there is another by J. Stow for R. Wilkinson, 1811, after a panel painting, *penes* the Society of Antiquaries, of Dr. John King preaching before James I. on March 26, 1620.

The Architects' Technical Bureau. WE publish in another column a communication from the Architects' Technical Bureau giving an account of the constitution of a Committee, to be called the "Selection Committee," for considering and approving fittings, materials, and specialities connected with the building trade. Those approved by the Committee will be described in circulars of a standard form and size, available for subscribers to the Bureau, who will thus have before them a selected set of trade circulars which have received the official approval of the Bureau. The names of the architects forming the Selection Committee are a guarantee that the selection will be made with judgment.

ROYAL ACADEMY LECTURES ON ARCHITECTURE.

IN his third lecture, delivered on Monday, Professor Blomfield took for his subject, "Gaillon and the Royal Buildings." In regard to the claims made for the master-builders, the documentary evidence in regard to which was referred to in the last lecture, they had now to consider the internal evidence of the buildings, and whether any organic conception of architecture, any trace of a dominant personality was to be found in the buildings with which their names had been connected. A study of these buildings showed that they exactly represented the transition through which not only the architecture but the whole intellectual life of France was passing. Gaillon, begun in 1497, by d'Amboise, Cardinal Archbishop of Rouen, was a compromise; built on the foundations of an older building, the plan was an irregular quadrangle, and, instead of an Italian palace, the new building was really a late Gothic house peppered with Italian detail. The builders were Frenchmen, but the artists employed for all details

were Italians. After d'Amboise's death in 1510, a very elaborate monument was raised to his memory in Rouen Cathedral, but there was no trace in it of the selection, the reticence, which marked the best Italian work. Compare it with the de Brezé monument opposite, attributed (perhaps wrongly) to Jean Goujon, and the contrast was obvious; French art had far to travel before it arrived at this power of concentrated detail. It was clear that the new manner had not yet found its footing in France.

Azay-le-Rideau was important in the history of early French Renaissance as the first deliberate breach with mediæval methods of planning. But the king himself was the man who most contributed to the adoption of the new manner in France. He, "qui aimait fort à bâtir," was practically his own architect. The unusual plans of his hunting boxes, La Muette and Chaluau, were probably due to himself. His first building enterprise was his addition of a new wing to Blois; but this had been relentlessly "restored" in modern times. But his imagination did not rise beyond ornament as the *raison d'être* of architecture. Blois was built by French masons on traditional lines, with a thin dressing of Italianate details. The history of Fontainebleau, which was much better known, was sketched out in some detail. St. Germain-en-Laye was another example of a building in which the plan was entirely dictated by the foundations of an earlier building, "d'une assez sauvage quadrature." Chambord, the greatest of Francis' enterprises, had a symmetrical plan, but the exterior treatment showed an ingrained mediæval tradition, and no one but a French mason steeped in that tradition could have carried out the marvellous double staircase. But there was no escaping the attraction of Chambord. It might not be great architecture, but it had the sort of charm one would expect from the palace of the Marquis of Carabas: Here again they were baffled when they attempted to trace the personal designer.

The subject of Professor Blomfield's fourth and concluding lecture, delivered on Thursday, was "Domestic Architecture to the Death of Francis I." The Court of Francis I. was a "flying Court"; in each place where it was set up a building had to be provided for the king and his Court, in the shape of a château or a hunting-box, which was a partial explanation of the king's mania for building. His example was followed throughout the country, in various buildings representing the new manner; buildings with little individuality; trade work, it might be called, by men who were not at home in the style. In some cases additions of Renaissance character were made, the mediæval portions being left as they were. The determining factor seemed to have been whether the owner had been in Italy, or had come across any wandering Italian artists.

Two great houses, Ecouen and Ancy-le-Franc, were conspicuous among the buildings of the latter part of Francis' reign. Ecouen was originally built 1532-42, by Billard, a master-mason of Paris, for the Constable Anne de Montmorenci, with some remarkable additions ten years later by Bullant. Ancy-le-Franc was considered by Sauvageot to be unique in the history of the French Renaissance, on account of its completeness and its association with Serlio and Primaticcio. It had terraces above the moat, which was crossed by bridges at the back and front. Terraces and moat were now gone, and the building so much restored that it was difficult to do justice to the original design. The plan was a quadrangle, and in its severe simplicity the building was an advance on the disorderly methods of the earlier Renaissance. The design was probably Serlio's, though the name of Primaticcio had been connected with it. The houses already referred to might be taken as typical of the greater houses of the first part of the XVIth century. Generally speaking, the ambition of the builders did not rise beyond lavish ornament; the architecture was a frame for the anecdotes of the sculptor. But there were signs of a real advance towards the end of the reign, as in Nicholas de Valois Hôtel d'Ecoville at Caen (1535), which probably inspired Mr. Bodley's design for the London School Board Offices. The tendency of neo-classic was to ignore materials as a source of effect from their colour and texture; but the French instinct for pure form led the architects of the XVIIth century to preserve and develop skilfully the mountainous roof which was the legacy of mediæval tradition. Some tentative advance was also made in staircases. The straight staircase with parallel flights and coffered soffits first appeared at Villars-Cotterets, and in Francis' work at the Louvre. But, by the standard of acknowledged masterpieces in the art, the architecture of the Francis I. period was found wanting. Out of it, however, was to arise the splendid version of neo-classic which was to reach its full maturity at the end of the XVIIth century.

BRITISH SCHOOL AT ROME.

THE first open meeting of the School during the present session took place on Monday, the 1st inst. The first paper was read by Mr. H. Stuart Jones, ex-Director of the School. Under the title of "Miscellanea Capitolina," he discussed various problems which had presented themselves in the course of his researches in connexion with the catalogue of the sculptures of the municipal collections of Rome which the School has undertaken.

Mr. Stuart Jones also dealt with the famous Portland vase. This was formerly preserved in the Barberini Library, and the earliest mention of its existence there dates from 1642, two years, that is, before the death of Pope Urban VIII., a member of the Barberini family, and the builder of their great palace near the Quattro Fontane. The statement, now currently accepted, that it contained the ashes of the Emperor Severus Alexander, and was found within the sarcophagus now in the Capitoline Museum (which bears on its lid the recumbent effigies of two personages supposed, but wrongly, to be the emperor and his mother), has no foundation in fact, and does not occur until the very end of the XVIIth century. It rests upon a further mistaken assumption that the reliefs on the vase itself refer to the birth of the Emperor, whereas it belongs to a considerably earlier date. Further, it is known that the sarcophagus had already been discovered in May, 1582, when the possibility of its acquisition was considered by the Communal Council, though it did not pass into the municipal collections until eight years later. A contemporary writer, who mentions the discovery of the sarcophagus in the tomb known as the Monte del Grano, on the Via Tuscolana (see "Papers of the British School at Rome," iv., 53), says nothing of the vase, which would be inconceivable had it been found in the sarcophagus.

The Director (Dr. Thomas Ashby) then gave a short description of the Villa of the Quintilii, on the Via Appia, about five miles south-east of Rome. It is situated on the left of the road, commanding fine views, and occupies an almost entirely level site. Its remains are more extensive than any of those in the near neighbourhood of the city, but consist to a great degree of isolated groups of buildings. This is partly due to the fact that considerable portions are only preserved just above ground level, so that the connecting links are in many places lost; but Canina's plans give an entirely false impression of the whole, and are often inaccurate and far too freely restored. The plans made for Dr. Ashby by Mr. F. G. Newton, student of the school, represent accurately what is now to be seen on the site; but excavation would be highly desirable, here and on the sites of other villas also, for it is certainly the case that we know far more of the planning and arrangements of Roman villas in the north of Europe than of those in the immediate neighbourhood of Rome. Though many of these last have been partially excavated, especially towards the end of the XVIIIth century, this was done almost entirely with the idea of discovering works of art, and no plans were taken nor scientific descriptions made; while the XIXth century has marked very little progress in this particular regard. The buildings of the villa include several water reservoirs, including a circular one, 100 Roman ft. in external diameter, with six chambers parallel to one another and intercommunicating. The water supply came by means of a private aqueduct, which branched off from one of the great aqueducts, possibly the Aqua Julia; some of its brick arches are still preserved some way to the south-east of the villa. Among the most prominent remains are those of a large fountain, with an apse roofed with a semi-dome and decorated with niches, fronting on to the Via Appia. This, however, was not a part of the original construction of the villa; for the entrance to it from the high road is broken through the curved end of a wall which contained the channels of two aqueducts, one above the other, and must once have been continuous. This wall enclosed a long narrow garden, of the kind which, as early as the time of Pliny the Younger, was known from its shape as a stadium or hippodrome. When the alteration above alluded to was made, the width of the garden was increased to about thrice as much as it had been, and a garden of the shape alluded to constructed elsewhere in the villa.

The two most prominent buildings of the villa are two large rectangular halls, lighted by large windows, which must have been closed, one would imagine, with glass in winter. One contained a bath, while the other was decorated with fountains and statues; in neither case is their connexion with the buildings surrounding them altogether clear. Below the former of them is a large circular structure, open to the air, which may have contained a fountain basin. The concrete of which the villa is built is almost entirely faced with brick or with small rectangular blocks of tufa mixed with brick, either in alternate courses or in bands of three or four courses at longer intervals.

The villa bore the name "Statuario" during the Middle Ages, and only acquired that of "Roma Vecchia" in the XVIIIth century. This name is also common to that of Sette Bassi on the Via Latina, and this fact has led to much difficulty and confusion in the determination of the provenances of the various works of art of which it is recorded that they were discovered "at Roma Vecchia." The name "old Rome" was not unnaturally applied to a group of ruins of this kind, and they were indeed believed to belong to an ancient village. It was only the excavations of 1827-9 that led to the discovery of lead pipes bearing the names of the brothers Quintilius Condianus and Quintilius Maximus. They had been consuls in 151 A.D. together, and were murdered about 182 A.D. by order of the Emperor Commodus, who was jealous of them for their eminence and their wealth. After their death he took possession of the villa, and it seems to have remained a part of the imperial domain until the IVth century at least. The discovery, about 1854, of a group of lead water pipes belonging to the first half of the century, probably points to the establishment of a distributing centre to the neighbouring estates of some of the water conveyed by the aqueduct mentioned above, though exact particulars were unluckily not noted. Dr. Ashby also exhibited an important series of drawings, by Mr. F. G. Newton, of the Columbarium of Pomponius Hylas, near the Porta Latina, containing interesting paintings and stucco decoration attributable to the 1st century

of our era. It is perhaps the best preserved monument of its kind extant, and it is hoped that funds may permit the publication of these drawings in Vol. V. of the "Papers of the School."

BLACKPOOL LIBRARY COMPETITION.

THE conditions for this competition, which were originally of such an irregular nature as to cause the Royal Institute to advise their members not to compete, were subsequently altered, largely owing, we understand, to the representation of two local architectural societies. The result of this is clearly shown by the number of sets of drawings sent in, no fewer than 140, and by the high standard reached by a great many of the schemes. By bringing their conditions into line with what is required by the profession, the Blackpool Corporation have commanded some of the best intelligence in the country which has been brought to bear upon their particular problem, and we feel sure that many of the well-known names which are among the competitors would not have appeared if the original conditions had been adhered to.

Mr. G. H. Willoughby, F.R.I.B.A. (Manchester), the assessor, shows his appreciation of the high level maintained by the designs by recommending that the 50 guinea premium, which should be merged in the successful competitor's commission, should be added to the other premiums of 30 guineas and 20 guineas, and the whole 100 guineas divided equally among the five competitors whom he brackets for the second place. He also selects nine other schemes for honourable mention.

The site for the Library, in a central part of the town opposite Christ Church, is a corner one with nearly equal frontages to Queen-street and May Bell Avenue. Space has to be left at the end of the Queen-street front for a proposed Art Gallery. It was suggested in the conditions that the entrance should be a corner one.

The requirements were about the same as is usual for a library to cost 12,500*l*., and included magazine-room, news-room, and lending library on the ground floor, and reference library, lecture-room, committee-room, etc., on the first floor. One of the difficulties of the plan of the first floor was in the arrangement of the committee-room and librarian's room, with an anteroom and lavatory of an area of 550 sq. ft. which was asked for. It was not definitely stated in the conditions that this anteroom was to be in connexion with these two rooms, but it was placed between them in the schedule, and the somewhat large area asked for (550 sq. ft.) suggested that it was to be considered as of some importance.

Mr. Willoughby placed the scheme sent in by Messrs. Cullen, Lochhead, & Brown, of Hamilton, first, and awarded second place equally to Mr. C. H. Potter (Manchester), Messrs. Russell & Cooper (London), Messrs. Cooper & Slater (Preston), Messrs. Thomson & Bristow (London), and Mr. H. R. Gardner (Leatherhead).

We may say at once that we consider that Messrs. Cullen, Lochhead, & Brown's scheme is a thoroughly good and workmanlike one, but there is really not much to choose between it and several of the others just mentioned. This is inevitable in a small competition of this sort; and where the winning design seems to have scored is in economy. They appear to have been able to make their two main rooms on each floor slightly larger than most of the other competitors without increasing their cube. And where all else was so close, this may have decided the assessor in their favour.

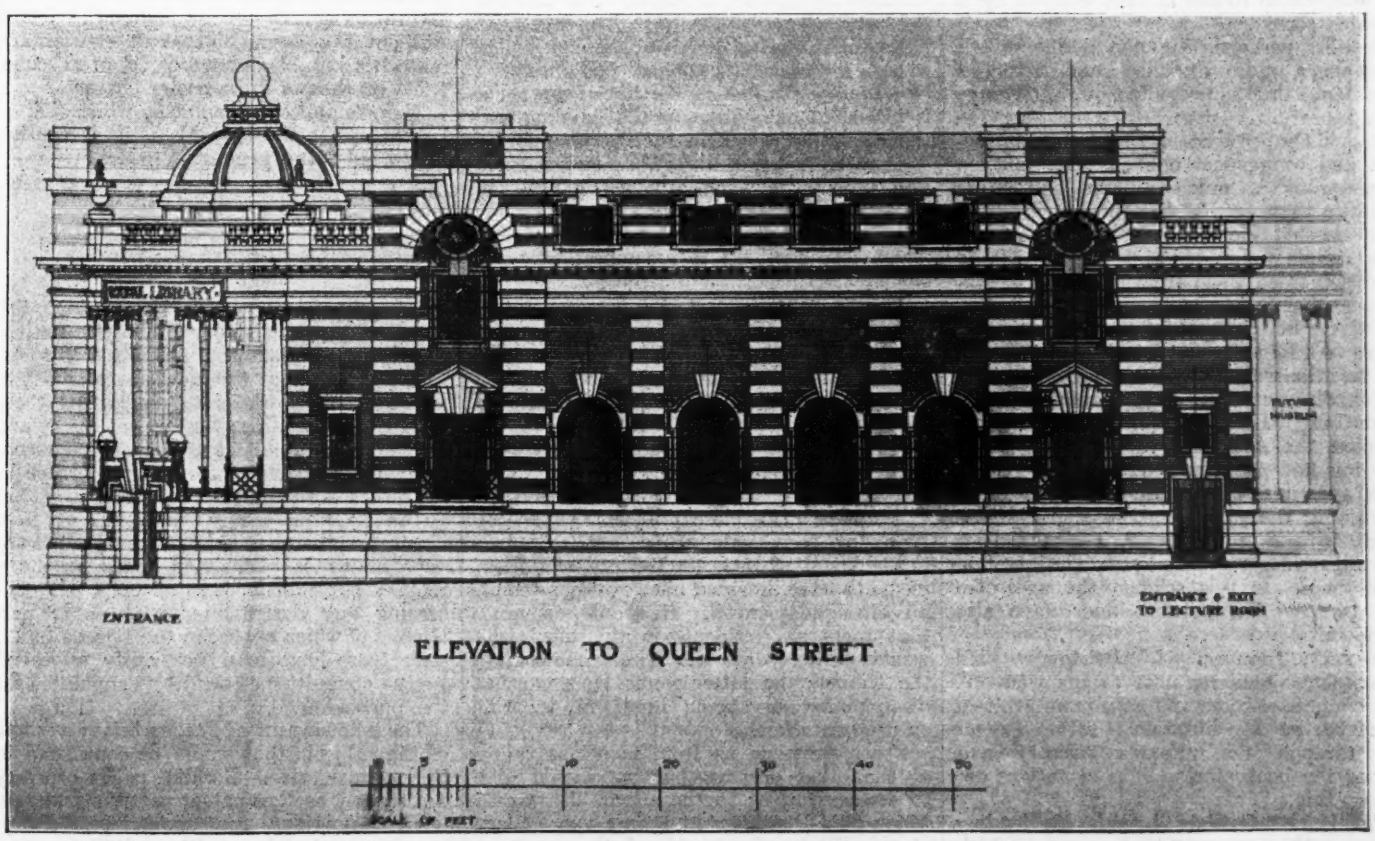
The general scheme of their plan, which has been followed by nearly all whom the assessor has commended, consists of a corner entrance leading into inner hall, from which open to right and left news and magazine rooms along the principal street frontages. Facing you as you enter is the entrance to the lending library (on the open access system) with stacks arranged on the radiating principle, with the wall on the far side cut off on the octagon. At the far end of the news-room, with entrance from May Bell Avenue, are the juvenile rooms. The lending library is top-lit, and forms on the upper floor practically an internal area of rough triangular shape. The news and magazine rooms are of rather irregular shapes, but we hardly think that this is a disadvantage, as it does not interfere with the supervision, and if skilfully treated might have the effect of lessening the gaunt and bare appearance which these rooms sometimes have in Public Libraries, for a severe and Adam-like style which we think peculiarly appropriate to a library does not seem to have been aimed at by the authors.

The upper floor plan we do not like so well as the ground plan. The librarian's room and committee-room are separated by the reference library and the anteroom, to which we have already alluded, is on the opposite side of the upper hall to the committee-room, and leads only into the lecture-room, and at the opposite end to the platform. It might have made a better arrangement if the librarian, committee-room, and anteroom had been grouped together with a private staircase where the librarian and two book stores now are. There are two small lavatories for gentlemen and ladies opening off the upper hall which were not asked for.

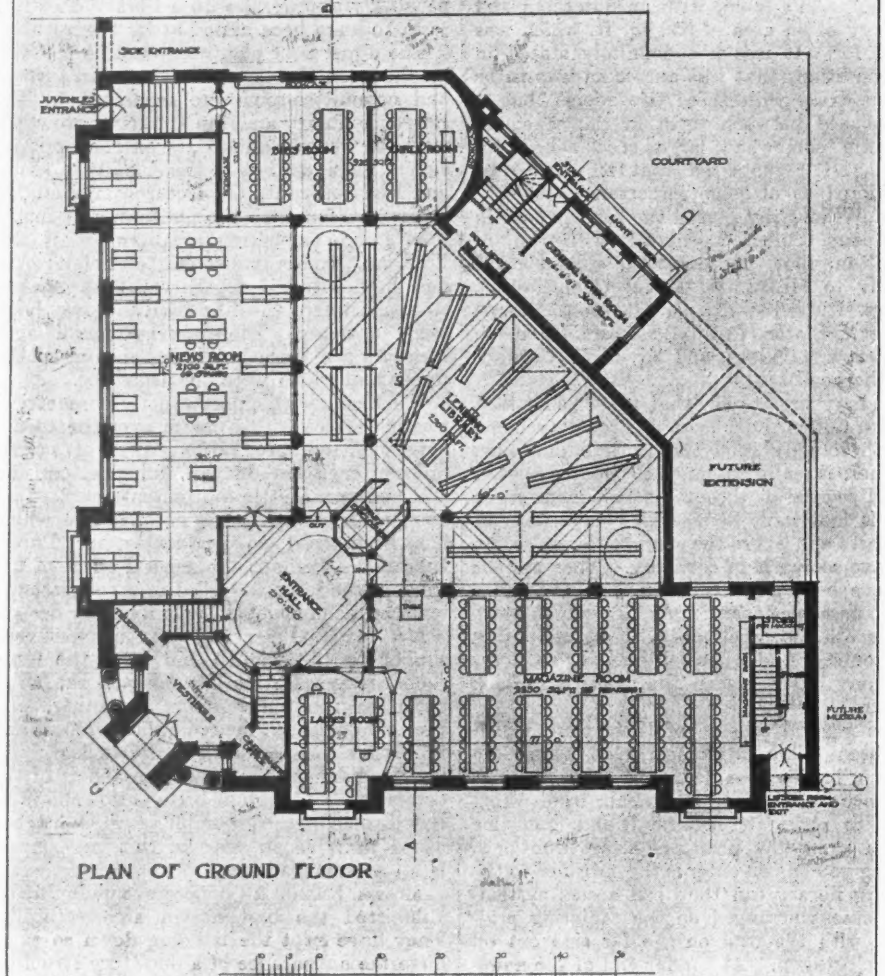
The façades, which are exactly symmetrical to each street with a dome over the corner entrance (we are rather tired of corner domes) encircled by an Ionic colonnade, are, perhaps, a little too pretentious, but are good examples of this type of design which has been used so frequently for Public Libraries. Perhaps the general effect of the wings is too lofty and piled up to suggest the repose which one looks for in a library design.

Mr. C. H. Potter submits a plan very similar to the winner, but with the main rooms reversed. He has omitted the ante-room on the upper floor altogether, and the lavatories to the committee-room and librarian's room are awkwardly tucked away in triangular spaces round the angles of the octagonal upper hall. He also shows a board-room on the ground floor which was not asked for; but in spite of this his scheme is an economical one.

Messrs. Russell & Cooper have undoubtedly submitted the best design architecturally. They have kept the building down so as to have the appearance of a one-story structure by using a Mansard roof over the lecture hall and reference library. The first floor level comes just below the underside of the architrave to the main entablature, the sills of the windows which occur in the Mansard above a lofty plain attic, are, therefore, 10 ft. up from the floor level. This is rather an advantage than otherwise. Internally, the treatment of the lending library as a true octagon gives promise of a more architectural



Blackpool Library Competition: First Premiated Design.



Blackpool Library Competition: First Premiated Design.

treatment, and is as practical as the vague shape of the winner. On the first floor the authors of this scheme have omitted the anteroom altogether, and show the librarian and committee rooms in one, divided by a movable screen.

This is, perhaps, the one design which attempts a more dignified and reserved appearance than is presented by the average Free Library.

Messrs. Cooper & Slater's scheme is a practical and economical one on plan, and on elevation it is much quieter and more domestic than any of the foregoing. They have avoided the dome at the corner, but their simple unbroken roof ridge seems to have prevented them from obtaining a toplight to their upper hall, which is rather ineffectively lit by one window from the area. There is a large proportion of brickwork in the façades, which suggests a careful eye on the small 5 per cent. margin allowed in the conditions. These authors have wisely planned the Art Gallery as a suggestion, showing how it would work in with their back area and the return of the far block containing the juvenile rooms. All this is very uncertain in the winning design, and has not apparently received much consideration from them. In this scheme the anteroom and lavatory to the first floor have also been omitted.

Messrs. Thomson & Bristow's plan approaches singularly near to the winners'. The committee-room and ante-room are well managed, but the librarian is rather too far off, through the reference library and among the book stores. The elevations are rather thin.

Mr. H. R. Gardner bounds his lending library with a segmental arc, around which like an ambulatory he puts his junior rooms and book stores. The elevations are quiet and rather pleasing. The blank wall to the lecture-room and reference library give the effect of restfulness, but we feel sure that they would be pierced with windows by the requirements of a Library Committee.

Messrs. Crouch, Butler, & Savage's plan resembles the last mentioned, but we do not like the way in which the librarian's room is placed in one corner of the building and the committee-room in the exact opposite, so that the reference library and lecture-room have both to be traversed before the librarian could come to the committee-room. They have not been able to resist an angle dome, which is carried up to an unnecessary and extravagant height.

Mr. J. B. Fulton's design is not particularly striking, except for a certain largeness of scale about the entrance feature. The plan is simple and straightforward.

Messrs. Wills & Anderson have entirely enclosed in the triangular area above the lending library. Their plan is not a very economical one. The elevations are thin and straggling.

The Byzantine design of Mr. C. Batley (London) seems singularly out of place in Blackpool, whereas Mr. Buttery, of Morley, seems to have designed his elevations to suit a Whit-Monday crowd. He should remember that there are residents in the town who would probably use the library more than the tripper; the latter would be somewhat disappointed on being lured in by this enticing exterior.

Space prevents us from mentioning any of the other designs, but we should like to say a word as to the admirable way in which all 140 sets are hung in a long gallery at the Winter Gardens, and the result of this has been a widespread interest among many others besides architects.

THE ARCHITECTS' TECHNICAL BUREAU:

APPROVED MATERIALS AND FITTINGS DEPARTMENT.

A MEETING of architects was held at the Holborn Restaurant on Wednesday, the 3rd inst., when the following gentlemen were present:—Mr. Keith D. Young (in the chair), Messrs. Louis Ambler, Walter Cave, H. C. Corlette, A. W. S. Cross, Guy Dawber, Henry T. Hare, George Hubbard, Geoffry Lucas, William Pite, Halsey Ricardo.

The meeting was arranged to consider the formation of a Selection Committee for the purpose of considering and approving fittings, materials, and specialities connected with the building trade. Craftsmen and manufacturers are invited to bring their subjects before this Committee, which will approve those fittings which are of good design and those specialities or materials that are of a useful and practical character. No charge is made to the manufacturer for exhibiting his goods in this manner, but photographic reproductions or circulars to a standard form and size of those subjects approved will have to be prepared, copies of which will be forwarded by the Bureau to the architect subscribers, the manufacturers defraying the equivalent to them of the cost of postage. All such illustrations or information will bear the badge of the Bureau, thus indicating that these subjects have been approved by the Selection Committee.

The architect subscribers are supplied by the Bureau with filing folios allotted to various classes of materials and fittings, these forming a concise reference library for materials or designs for the architect's use.

Hitherto an architect desiring to make a choice of fittings or obtain particulars of a suitable speciality has had to search through numerous catalogues, etc., and after considerable trouble the selection thereby afforded is often unsatisfactory.

The designs and information contained in the Bureau folios, having been approved by the Selection Committee, will be such as an architect will, no doubt, desire to have by him for everyday reference in his office, and also such as may be submitted to a client.

In order that these designs shall meet all requirements and be of general utility the question of cost will be carefully considered, and the designs to be contained in these folios will cover a range of cost of articles and materials suitable either for work of an economical or that of more costly character.

The Committee appointed, which will be known as the Selection Committee, consists of the following gentlemen: Messrs.—

Louis Ambler	Henry T. Hare
Basil Champneys	Geoffry Lucas
Walter Cave	Edwin Lutyens
E. Guy Dawber	A. Marshall Mackenzie
William Flockhart	Sir Chas. Nicholson
W. Forsyth	Halsey Ricardo.

Sub-committees will be formed from this and the Bureau Advisory Committee for the consideration of subjects submitted to them.

The principle of this new development of the Bureau's work is to single out those designs or specialities that are of merit, and to enable the architect to have the information in a convenient form for reference in his office. It is by no means easy to select an article from a mere catalogue or from illustrations; and, further, many have not the opportunity of seeing the goods at showrooms; but confidence is at once felt concerning any designs, materials, etc., particulars of which appear in the Bureau folios, since these have been previously approved by the committee of architects appointed for the purpose.

The following may be taken briefly as some of the subjects that would be considered in this manner, viz.:—Building goods of every description, such as patent partitions, stones, bricks, flooring, roof coverings, damp-proofing materials, sanitary fittings, etc.; and also electric light fittings in metal and wood, gas fittings, grates and interiors,

mantel registers, gas stoves, mantels, door and window furniture, art metal work, rain-water heads, etc.; decorative work, wall and floor decorative coverings, lead lights and stained glass, etc.

Manufacturers or craftsmen desiring to bring their goods to the notice of the Committee should apply to the Secretary, 24, Hart-street, Bloomsbury, W.C.

THE ARCHITECTURAL ASSOCIATION.

AN ordinary fortnightly meeting of the Architectural Association was held on Friday evening last week at No. 18, Tufton-street, S.W., Mr. Walter Cave, President, in the chair.

The minutes of the special meeting held on the 22nd ult., and the ordinary meeting which followed, were read and confirmed, and some recommendations for membership were read.

Mr. C. Wontner Smith, Hon. Secretary, then made the following announcements:—

Meeting of Debating Society on February 12. Paper by Mr. Kenneth Gray on "Heating and Ventilating."

Meeting of Camera and Sketching Club on February 18. Paper by Messrs. A. E. N. Russell and P. M. Andrews on "The Proper Use of the Camera and Sketch-Book."

Third Spring Visit, February 13, to the Holborn Town Hall, by permission of Messrs. Warwick & Hall; also to the new premises of the British Medical Association, by permission of Mr. H. Percy Adams.

Mr. C. O. Hooper, Stroud Green, N., was then elected as a member.

The President announced that, through the kindness of Mr. R. Phenè Spiers, the Association had been presented with an original drawing, by Professor Cockerell, of the proposed library at Cambridge. It was a drawing dating from about 1830, and one of the conditions accompanying the presentation was that the drawing should be framed and hung up in one of the classrooms. It was an interesting piece of work and an interesting memento of a distinguished architect, and they would be pleased to see it in the Association premises.

On the motion of the Chairman a hearty vote of thanks was accorded to Mr. Spiers.

Schools.

Mr. H. T. Buckland then read the following paper on "Schools":—

"Mr. President and Gentlemen,—

In venturing to address you on a subject upon which so many are better qualified to speak than myself, I fear I cannot hope to add much that is new to what has already been said upon a class of building so governed by rules and regulations with regard to planning that any very great departure from existing models would be well-nigh impossible, until a new curriculum provides a necessity for a different environment; neither would it be possible in an evening to attempt any serious account of the history and development of school buildings in England and other countries, but as it is always of interest to hear how problems of planning and detail have presented themselves to, and been dealt with by others, I shall venture to draw your attention to some of the points which have particularly exercised my own mind in the planning and design of public elementary and secondary schools, illustrating my remarks by examples of recent school plans (kindly placed at my disposal by various architects) and some of my own.

Before attempting any illustration of plans of school buildings, it will perhaps be well to consider the curriculum of the Council schools of this country as ordained by the Board of Education.

Elementary School Curriculum.

The elementary schools take children from the age of five; they may be taken younger, but the Board has recently discouraged the entrance of children under that age. From the ages of five to seven years children go into the infants' department, and from the latter age into the upper departments. In the upper departments there are seven standards, the lowest being number one; when children have passed standard five, they are eligible for a secondary school, providing they can pass the entrance examination. In an elementary school children may be kept until the age of fifteen, after that no grant will be paid; and in secondary schools until the age of eighteen, after that age the same remark applies. In an elementary school the usual hours are from 9 till 12, and 2 to 4.30, with no school on Saturdays. The subjects taught are reading, writing, arithmetic, a little algebra, English history, geography, elementary physics and chemistry, singing, drawing, manual training and physical exercises. Latin and French are taken as exceptional subjects in a few schools.

At nine in the morning the various departments assemble in the hall for the Lord's Prayer and the singing of a hymn, and then dismiss to their class-rooms.

The above curriculum for an elementary school is, I believe, a fairly general one. I understand that in secondary schools very much greater licence is now permitted in the arrangement of a curriculum than was formerly the case, so that the one I am about to outline must not be taken as exactly typical, although it appears a very good one. The following is a list of the subjects taught:—Mathematics, comprising arithmetic, algebra, and trigonometry; English; French; Latin; German; geography; history; singing; science; drawing; handicrafts (working in wood and iron); gymnastics.

Of these, out of a working week of twenty-five hours and twenty-five minutes, drawing absorbs one hour and a third; handicraft, two hours; science, four hours and a half; and gymnastics, one hour and a half. These times are given as averages, as they vary in the different classes. In science, for instance, in the lowest forms one hour and three-quarters only are devoted to this subject; while in the highest it runs up to seven hours. In this particular school there are five forms, of which the sixth is the highest, and the second or preparatory class the lowest; some of these forms are divided into upper and lower, and some of them into upper, middle, and lower. The school assembles in the hall at 9 for hymns, prayers, and a short reading from the Scriptures before dispersing to classes. The hours are from 9 to 12.30, and from 2 to 4.30. There is a half-holiday on Wednesdays, and a whole one on Saturdays.

I have ventured to go into these details because it seems essential to have a clear idea with regard to the users of a building before proceeding to discuss the kind of accommodation which should be provided to afford the maximum amount of convenience for them. In the daily time-table of both the elementary and the secondary school it will be observed that there is an assembly each morning before dismissal to class-work; this gives rise to one of the important differences between the plans of schools in this country and those of America and the Continent, viz.:—the relation of the assembly hall to the rest of the building. In the majority of our schools this occupies an important position, due mainly to its frequent use; in America and on the Continent it is usually placed on an upper floor and comparatively out of the way, owing to the fact that a daily assembly is not the rule, as the children enter the school and go straight to their class-rooms. For this reason we find many of these schools planned with a cloak-room in connexion with each class-room.

Rules of the Board of Education.

The rules of the Board of Education to be observed in the planning and fitting up public, elementary, and secondary schools of necessity influence all planning so considerably that it is not possible for me to proceed very far without a reference to them, as they are the guide to which all authorities (upon whom the burden of providing school accommodation rests) are compelled to defer when arranging for the erection of a new building; rather, however, than discuss them *seriatim* I should prefer to consider their practical application. Let me assume for a moment that an Education Authority in a large town has to erect a new school, and is about to instruct an architect to prepare plans. What are the points upon which the latter will need to be informed?

1. The number of children to be accommodated.

2. In what number of departments the school is to be planned.

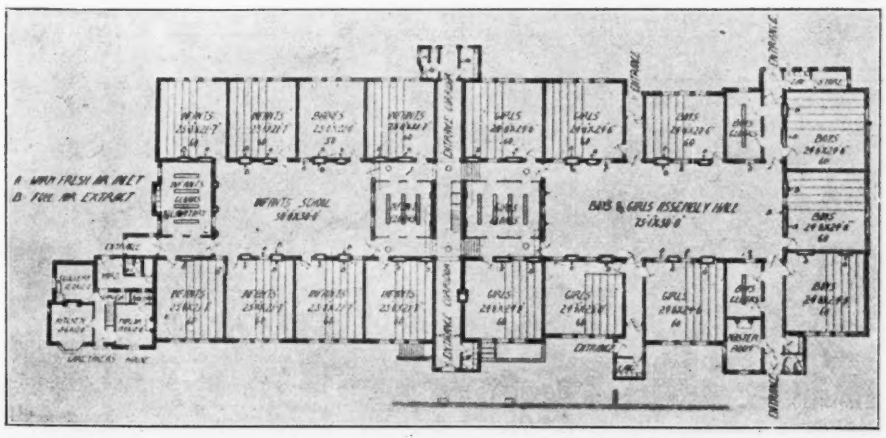
3. Is the building to be planned on one or more floors.

4. What numbers are to be accommodated in each of the class-rooms.

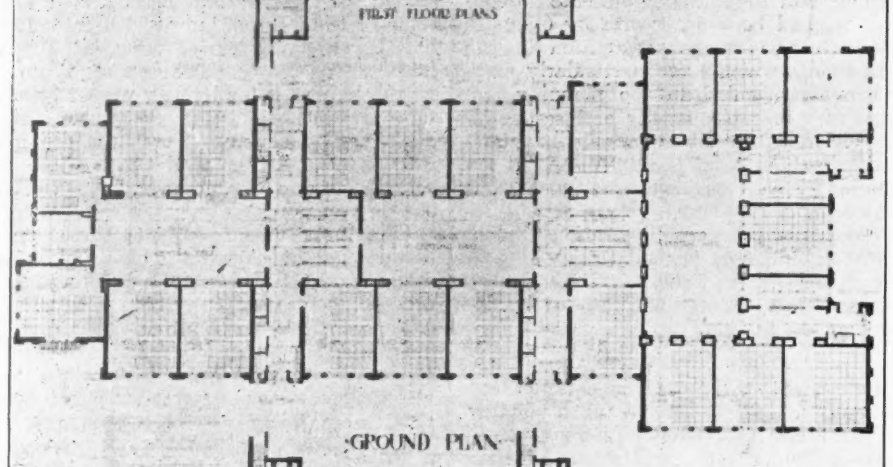
I have assumed a site has already been chosen, as in large towns sites have frequently to be purchased long before a school is required, so that in many cases the architect who is eventually employed to erect the schools cannot be consulted. Where, however, this is possible, it should certainly be done, as the question of aspect is an extremely important one. We have, many of us, I dare say, been faced with the problem of planning a school to go on a long narrow site, with its short axis north and south, and an absolute instruction to get the majority of the class-rooms on the south side; no easy matter if the school is to have central halls, and the length of the site is comparatively limited. It is true in a large town that one is not able always to choose a site with the *best* aspect, for the simple reason that there is not one to be had; in that case obviously any instructions with regard to the aspect of class-rooms should be very general in character.

Elementary Schools.

I will now return to the points upon which I suggested an architect would need to be informed before commencing to plan a school, and consider them in the light of the Board of Education's requirements. Dealing first



Conway-road School (Birmingham School Board).



School, Victoria Park (Birmingham Education Committee).

with elementary schools, my first two points together. Number to be accommodated, and in what number of departments. What does our guide say? "No school should ordinarily be built to accommodate more than 1,000 to 1,200 children in three departments. No single department should accommodate more than 400 children. A large school in three departments might conveniently be divided in the following proportions:—Boys, 360; girls, 360; infants, 380." It goes on to say: "In departments of this size, the most suitable plan is that of a central hall, with the class-rooms grouped round it." Now it is obvious from this instruction that a school with three departments if planned as suggested must have three central halls, unless advantage is taken of a further instruction, which says: "A single central hall may be provided for the joint use at separate times of two departments, provided that it is so placed as to be readily accessible from the class-rooms of each department." There may be many examples of schools where this condition has been taken advantage of. The only one I am personally acquainted with is at Darlaston, the plan of which I will shortly throw upon the screen. In this school, one hall is used for three departments. Now, although a three-department school may be the most efficient, it is also the most expensive both to build and to maintain, as a head master and two head mistresses have to be employed. Either this fact, or a preference for a mixed school, has led to the building of schools in two departments instead of three, viz.:—an infants' and a mixed department, whether with a view to economy or the preference already suggested, I am unable to say. If the latter, the plea is certainly justified by the Continental and the American practice, as mixed departments are the almost invariable rule both in America and on the Continent. And in Great Britain it may be said that as we go further north the mixed school gets more common, and in Scotland is almost universal.

The next question upon which we have to seek enlightenment is whether the building is to be planned upon one or more floors. Upon this point our guide says: "Where the site is sufficiently large, open and fairly level, the most economical plan is that of a school on a single floor. Such an arrangement is also preferable on educational grounds. In any case it is desirable that a school building should not be on more than two floors. A building on three floors is open to many objections, and should only be proposed in special circumstances or on very costly sites. This recommendation has, I think, been very widely adopted throughout the country; and in Birmingham no elementary school has for many years been erected with more than one floor.

Then as to the numbers to be accommodated in each of the class-rooms, after suggesting the sizes of the departments—boys, 360; girls, 360; infants, 380—the rules go on to say: "As a rule, such a department would probably require seven class-rooms." This would give us six for fifty each, and one for sixty, in each of the upper departments; and four for fifty, and three for sixty, in the infants' department.

Education authorities and head teachers in elementary schools are, I believe, fairly generally agreed that a class of fifty children is all a teacher can efficiently teach. The need for class-rooms accommodating sixty is chiefly to provide for the classes at the beginning of the educational year, as they are always larger then than at any other time, and only gradually drop to the average.

These, then, are the main points to which consideration must first be given in the planning of all elementary school buildings; I will now show one or two examples illustrating various methods of dealing with them. I think there can be no question that a central hall is undoubtedly the best for an elementary school, as it affords excellent means of supervision and convenient access to class-rooms, and although schools have been recently built with an enlarged corridor which might almost be called a central hall, the examples I propose to show all have the marked characteristics of a genuine hall.

Different education authorities have different views with regard to the erection of a three-department school on one floor. We shall find some prefer all the departments in *one* block, others in *two* blocks (the infants' department being the one usually kept separate), and in some cases a preference appears to exist for each department in a separate block.

The *pros* and *cons* may be briefly summed up as follows:—A building in one block is more economical to erect; can be heated from one centre, and is consequently cheaper to maintain. In two blocks slightly better lighting and probably better disposition of playgrounds are possible, and one central hall may be side-lighted. In three blocks the same remarks apply, and side-lighted central halls become possible in all departments, and a natural system of ventilation is facilitated.

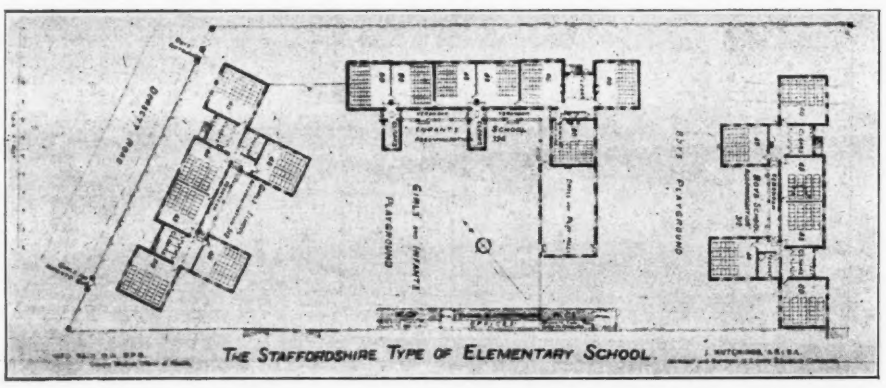
Of the many and varied plans of elementary schools throughout the country, these are a few examples selected merely to illustrate various types. Special conditions as to site and other circumstances give rise to infinite variety in particular cases, but with such I do not propose to deal, so will proceed to a consideration of secondary schools.

Secondary Schools.

Government aid for secondary education has only been available since the passing of the Act of 1902; until that time the Higher Grade School was the only continuation of State-aided general education, and the buildings provided for this higher grade education were modelled upon those for elementary education; it is, therefore, not surprising to find that the earlier secondary schools erected after the passing of the Act of 1902 bear all the marked characteristics of the elementary school in their planning.

The *central* hall still holds its own, and the Board of Education appears to regard it as the best type of plan, as witness a general note in "Principles to be Observed in Designing and Fitting-up New Buildings for Use as Secondary Schools," which reads as follows:—"The rooms should be grouped compactly and conveniently in order to secure easy and effective supervision and economy in working and maintenance. Generally speaking, in the case of schools where the number of scholars is considerable, this result can most satisfactorily be secured by placing the class-rooms on three sides of and opening from a central hall."

Differences of opinion upon secondary school planning will, I think, be found mainly on this question, and a marked tendency may be perceived to provide a hall which is not a passage-room to the various class-rooms, corridors, etc. Such an arrangement affords a room not only for general assembly, but one which may be also used (free from interruption) for various purposes, such as examinations, singing, drawing (if there is no art room), and any assembly of a portion of the school without disturbing the remainder, for any of which purposes a central hall is not so convenient. On the other hand, a central hall is, before all things, adapted for good supervision, but is this of extreme importance in a school with an adequate and thoroughly qualified staff? Expressions of opinion from head masters and mistresses certainly incline me to think not. If, then, a hall is required to be used for all or any of the purposes I have just mentioned, a *central* hall does not appear to be the best arrangement which could be adopted; if, on the other hand, supervision



THE STAFFORDSHIRE TYPE OF ELEMENTARY SCHOOL.

of teachers and students is of paramount importance, then the claims of the *central* hall plan cannot be disputed.

The Board of Education, as I have already pointed out, is very definite upon this question, and in addition to the clause I have already quoted, goes on to say: "Where more than one floor is necessary, the upper rooms can be entered from a gallery which should be in full view of the hall."

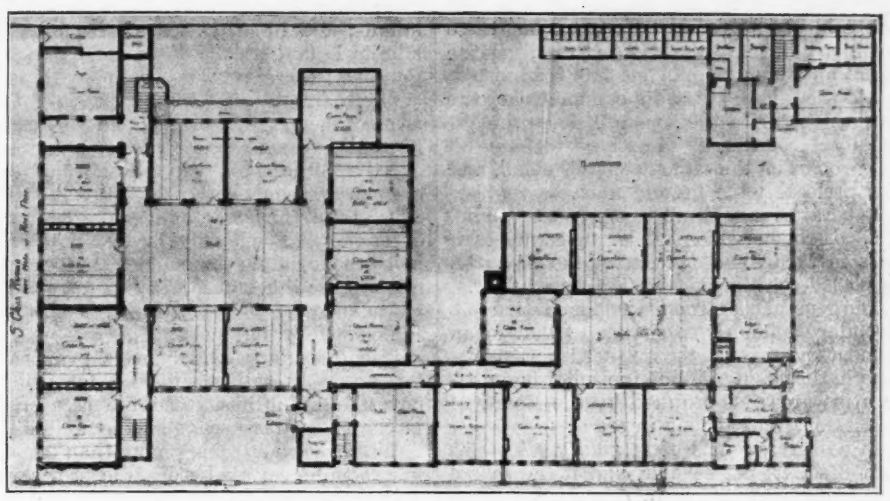
I know of elementary schools planned upon these lines which have been found noisy and inconvenient; possibly the better discipline of a secondary school would prevent the former; if so, might it not also ensure satisfactory behaviour without such elaborate provision for supervision? Fortunately, the Board of Education, while offering guidance, do not insist upon an abject submission to such guidance, and express their willingness to consider other suggestions in the following words:—"The Board recognise that, owing to the wide difference between the various grades and kinds of secondary schools, and pupil teachers' centres, it is undesirable to attempt to lay down any hard and fast rules as to the actual method of planning to be adopted except on points of fundamental importance."

I think it will be generally admitted that the best interests of all concerned are likely to be ensured by a course which affords opportunities for the expression of differences of opinion in the planning of school buildings. Many examples of recent secondary schools certainly show evidence that all are not agreed upon the point under discussion.

As in the case of elementary schools, I will now proceed to discuss the points upon which an architect will need to be informed in planning a *secondary* school.

1. With regard to the number of children to be accommodated, the Board of Education makes no suggestion on this point; personally, I know of no recent secondary school which accommodates more than 426 scholars in one department, and from 200 to 300 appears to be a very usual number.

2. In what number of departments is a school to be planned? As infants have no longer to be considered (except that a Kindergarten is sometimes provided in connexion with a girls' school), only two remain. Curiously enough, the Board of Education offers no guidance as to whether a school shall be in two departments—a mixed school, or entirely separate schools for boys and girls. As both are being built, there seems no doubt either that differences of opinion exist, or that motives of economy have probably borne their share in a decision, as in the case of elementary schools.



Harrison-road Schools: Borough of Leicester.

An arrangement which appears to be a sensible one on both educational and economical grounds (at any rate, so far as the cost of buildings is concerned), is to plan a school for boys and girls with hall and class-rooms separate for each, but with certain rooms for special instruction—such as chemical laboratories, lecture rooms, art rooms, gymnasium, etc., in common. It will be found that a time-table can be arranged which will permit of these rooms being used in turn by boys and girls, and economy is effected by not having to provide them in duplicate.

The *merit* of "mixed" or "not mixed" education in secondary schools, I think, we may conveniently leave to educationalists to settle.

Class-room Accommodation.

3. Upon the question of the number to be accommodated in the various class-rooms, we find very clear instructions in the Board of Education Rules, and I will venture to quote the section which deals with it in full:—"In every school there must be class-rooms at the rate of four for every 100 scholars. There must be in the class-rooms, as distinct from the laboratories and other rooms, sufficient accommodation for the whole number of the scholars for whom the school is intended to provide. A lecture-room, however, if suitable for class teaching may be counted as a class-room for not more than thirty, or less than fifteen scholars. Class-rooms should be fitted with single desks, having a gangway of not less than 18 in. between the rows and between the desks and wall on each side, 1 ft. between the last row of desks and the wall, and a clear space extending the full width of the room of not less than 7 ft. 6 in. between the front row of desks and the wall, for the teacher. The desks may be reckoned as occupying a space of about 3 ft. by 2 ft. in order to provide the requisite distance between the front of one and the back of that next in front of it.

To provide for this a floor area of from 17 sq. ft. to 18 sq. ft. per head will be required, according to the size of the class. In cases where it is found difficult to provide this amount, the Board will be prepared to accept a minimum allowance of 16 sq ft. per head provided that the arrangement can be shown to be satisfactory. In this case the desks should be placed closer together in pairs, with a gangway of not less than 2 ft. between the double rows of desks.

Where fireplaces are provided they should be placed in the outer corner of the room in order to avoid interference with the master's platform and blackboard.

Stepped seating should not be used."

Intimately bearing upon this and the total accommodation of a school, is an introductory note, which reads as follows:—

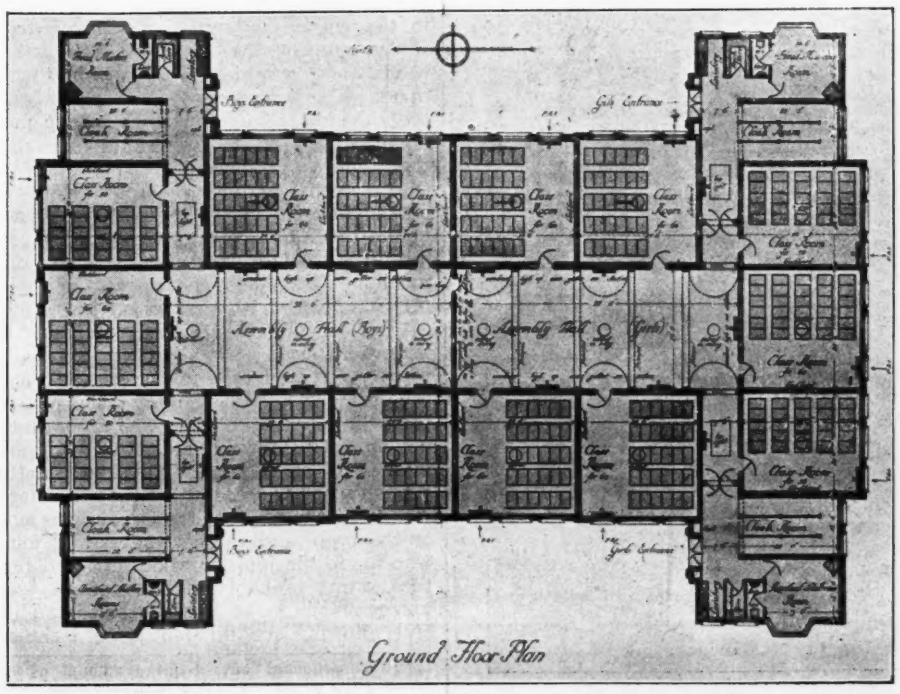
"It is important to remember that as the actual numbers in a class can seldom be made to correspond closely with the various sizes of rooms provided, the nominal accommodation as shown by the plans should exceed the number for which the school is intended to provide."

This means, of course, that as a general rule a school which has nominal accommodation in class-rooms for, say, 225, will only be considered as providing accommodation for say, 200 children.

The charming inconsistency of the promoters of school competitions is very noticeable with regard to this point, invariably the question goes to them as to whether the cost of the building is to be based upon the nominal accommodation shown upon the plans or upon the number for which the school is intended to provide. It is scarcely necessary for me to say that the invariable reply is the latter. Now, if the price allowed per head is 40*l*. (which, by the way, it seldom is and more often should be) the difference amounts to 1,000*l*., and it is entirely absurd to ask for the extra accommodation without expecting to provide for it in the cost.

As to the number of floors, the Rules offer no guidance except in so far as they assume that more than one floor may be necessary in a clause I have already quoted in connexion with the question of a central hall. It reads as follows:—

"Where more than one floor is necessary, the upper rooms can be entered from a gallery, etc., etc." I think there is little doubt that a two-story building is the most



King's Norton School (Northfield U.D.C.).

convenient. I am not acquainted with one consisting of a ground floor only, but there are many of more than two stories. If the desirability of more than one floor is admitted, what, then, is the best apportionment of the various rooms to the separate floors? Personally I consider it important to have all class-rooms on the same floor as the hall, and this preferably the ground floor.

Laboratories, lecture rooms, art studio, etc., all rooms which are occupied by each class in turn for a portion of the day, can be placed conveniently on the upper floor.

The general class-room accommodation in a secondary school is so similar to that of an elementary school, that I need not spend time in discussing it, but the following comparative areas, as required by the Board of Education, may be of interest:—

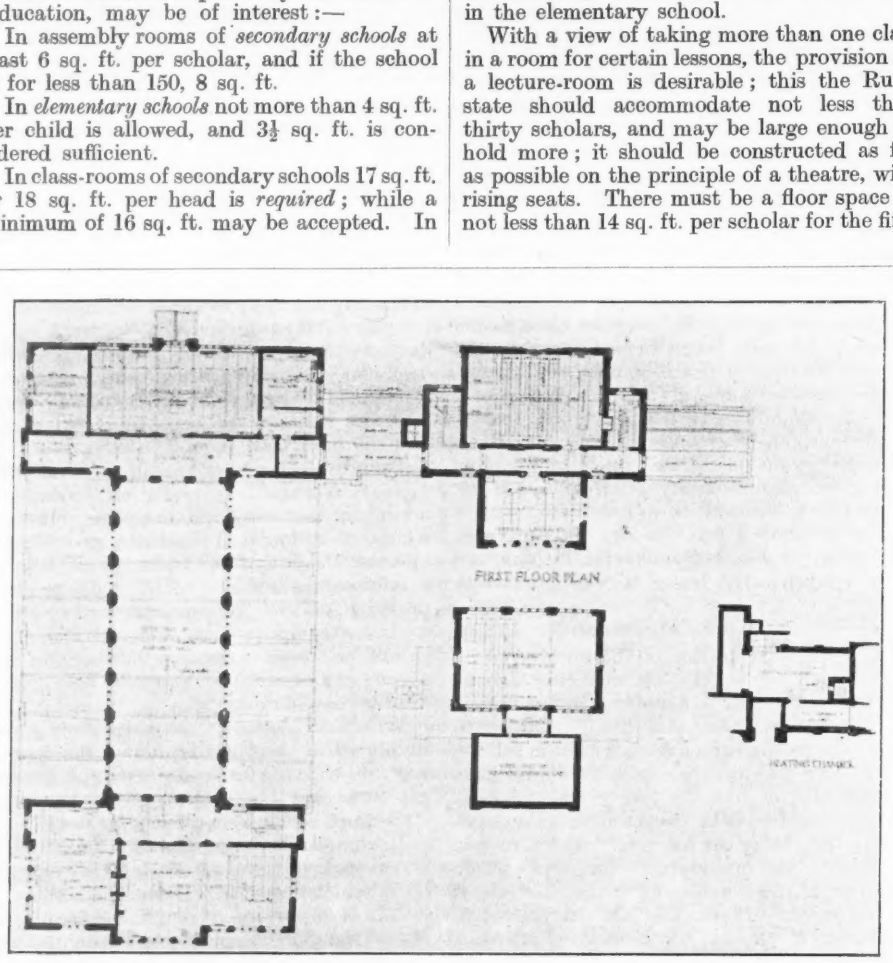
In assembly rooms of *secondary schools* at least 6 sq. ft. per scholar, and if the school is for less than 150, 8 sq. ft.

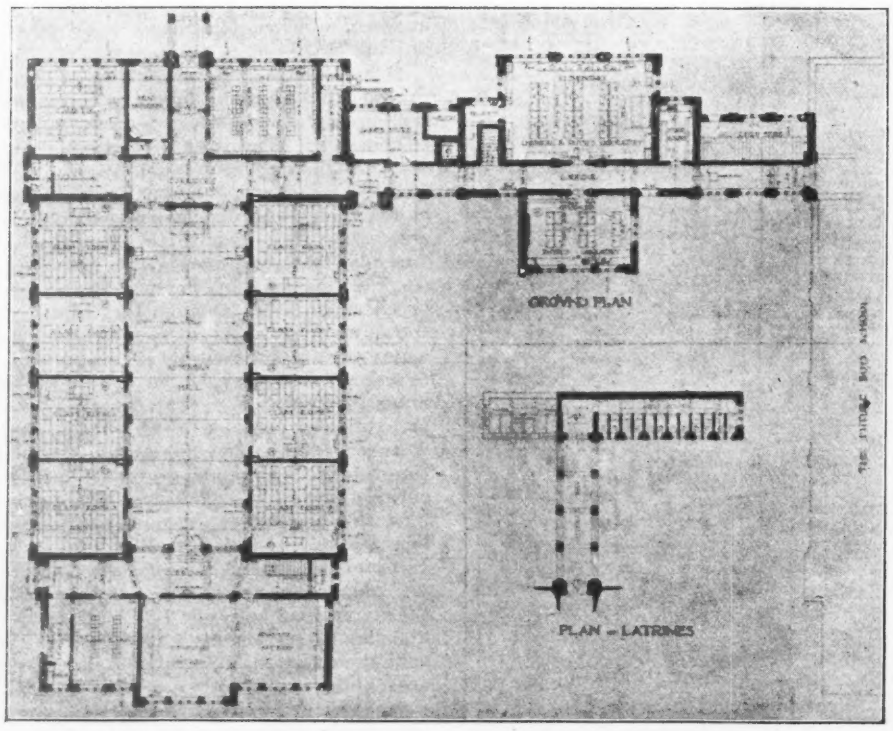
In *elementary schools* not more than 4 sq. ft. per child is allowed, and 3½ sq. ft. is considered sufficient.

In class-rooms of secondary schools 17 sq. ft. or 18 sq. ft. per head is *required*; while a minimum of 16 sq. ft. may be accepted. In elementary schools 9 sq. ft. is required for infants, and 10 sq. ft. for other children. I admit I find these differences somewhat puzzling; the schools are both for the same children (in the one case when they have, some of them, grown older); and the question naturally presents itself: Is the one too large or the other too small? In a small elementary school with a department for only 200, I think the latter, as even on the 4 sq. ft. basis the hall will only be 800 ft. in area. Now the children in an elementary school have to use this hall for drill in wet weather, and a space of 40 ft. by 20 ft. is not found sufficient for a large class.

If a secondary school has a gymnasium, the assembly hall is not used for drilling; nevertheless, it has twice the area of that in the elementary school.

With a view of taking more than one class in a room for certain lessons, the provision of a lecture-room is desirable; this the Rules state should accommodate not less than thirty scholars, and may be large enough to hold more; it should be constructed as far as possible on the principle of a theatre, with rising seats. There must be a floor space of not less than 14 sq. ft. per scholar for the first thirty scholars, and 12 sq. ft. for each scholar above that number. This room, as previously stated in the clause relating to class-rooms, "if suitable for class teaching, may be counted as a class-room for not more than thirty scholars."*





Secondary School, Bishop Auckland (Durham County Council).

THE CARPENTERS' COMPANY LECTURES:

THE HISTORICAL GROWTH OF DESIGN.

THE fourth of the series of lectures on Arts Connected with Building, arranged by the Carpenters' Company, was delivered on Wednesday last week in Carpenters' Hall, London-wall, E.C., by Mr. E. Guy Dawber, F.R.I.B.A., who gave the first of the three lectures arranged for on Woodwork (the two others are to be delivered by Mr. F. W. Troup, F.R.I.B.A., and Mr. A. Romney Green respectively), his subject being "The Historical Growth of Design."

The chair was occupied by Mr. J. Willson, J.P., Past-Master, who briefly introduced the lecturer, and remarked that fire-resisting structures were very much the order of the day. Some time ago he was told by an eminent architect that in some of the buildings he was then putting up the only carpentry work was the centring. That might be a serious matter for the carpenter, though he did not see why it should be; and he did not see why the carpenter of the day should not do as fine work as the carpenter of the past, whose work was one of the glories of the country. They should be thorough in their work, and should try and get the art feeling for it; and if they did that he believed the work of the XXth century would go down to posterity with as much fame as that which was done in past ages.

Mr. E. Guy Dawber, whose lecture was illustrated by a large number of lantern views, said it would be useful to follow the broad changes which took place in the past centuries in the forms and design of woodwork. Some might argue that this would partake too much of mere archæology and antiquarianism, and that it was out of place to-day, but his answer to that was that every craftsman should know something of the rich heritage bequeathed to him by his ancestors, and that a study and analysis of the old methods of building and the proper use and application of materials would help them in the solution of their own problems to-day. Woodwork in this country was more varied in the purposes to which it was applied than that of any other, and the buildings our ancestors erected were remarkable for the beauty and variety of their woodwork. If there was one feature more than another which distinguished the craftsmen of this country, it was the skill they showed in the science and practice of carpentry.

The subject divided itself into several heads, some of which could only be touched upon. There was the use of woodwork in roofs, spires, houses, and barns, ceilings, floors, staircases, doors, windows, etc.; and then there was the use of woodwork in furniture, screens, seats, stalls, pulpits, presses, chests, and so on. Of woodwork executed before the XIIth century we had few or no examples, but it probably did not differ much in design and character from that of the Xth and XIth centuries. Up to the XVIth century the Gothic woodwork and fittings in churches and houses were all of what we should call an ecclesiastical type, the ordinary style of the day; and for more than three centuries there was absolute connexion between wood and stonework, both in design and detail. This was natural enough when we recollected that the masons who built the walls of the church, the house or the barn, and the carpenters and joiners who made the interior woodwork and furniture, were probably natives of the same village and brought up with the same ideas; and allowing for differences of technique,

* In consequence of the large amount of space occupied by diagrams in the text this week, we are reluctantly obliged to divide this paper, and give the remainder, with the discussion, in our next issue.

the simple patterns of the stonemasons did very well for the timber work. Therefore we find the woodwork of the church identical with that of the house, and it was only after the Reformation and the introduction of Renaissance and classical detail that the ecclesiastical spirit in woodwork died out, and what we associated to-day with domestic work took its place.

From the time of the Conquest masons were producing a series of wonderful buildings all over the country, many vaulted with stone, culminating in Henry VII.'s chapel at Westminster and King's College Chapel at Cambridge; but in smaller buildings a preference was shown for timber roofs instead of the more usual stone ones. In certain districts this might have been due to the difficulty of obtaining good building stone. During all this period, when the art of masonry was developing in such a wonderful way, woodwork was more or less imitative, if we excepted the noble series of timber roofs, a large number of which still remain. These exhibited a fertility of design and soundness of construction truly astonishing, and placed the craft of the carpenter of the Middle Ages in the foremost rank.

The simplest and earliest description of roofs doubtless consisted of two rafters pitching against each other. Owing to the tendency to thrust out the walls, this formation soon led to the introduction of the tie beam, which, with rafters, gave us the simple form of roof still in use to-day. We found this throughout the Middle Ages in domestic and ecclesiastical work, often with a king post in the centre, treated as a shaft with moulded cap and base, and curved braces on either side. In certain districts one saw a remarkable similarity in the design of the roofs. The hammer-beam roof of the eastern counties, the trussed rafter roofs of Kent and Sussex, the waggon-shaped roofs of the West of England, all showed the influence of the fashion set perhaps by some strong personality, or the abundance or limitation of the material at command. Many old tithe barns were of admirable design, with centre and side aisles; and the one dating from the early XVth century, at Harmondsworth, near Hayes, Middlesex, was one of the finest. The well-known roof over Westminster Hall was one of the earliest, and it was a noble conception, superbly carried out. These timber roofs, the wooden screens to the roods and chapels, the stalls and benches, the doors and panellings, all based the *motif* of their design and decoration on the cusping and tracery of the stone windows, and copied and adapted them. The various phases of design could be seen succeeding each other in exactly the same way as among the contemporary works in stone, the main difference being that the work in wood was generally thinner, flatter, and more delicate. [The lecturer showed several lantern slides bearing on this point—wood screens, etc., which might have been in stone.] The use of timber in the framework of buildings was very common; and, in conjunction with stone and brick, formed in timber-growing districts the chief material of their construction. The lavish and almost wasteful use of timber in the construction of buildings in the West of England was to be accounted for by the existence of the large forests known to have flourished there in the Middle Ages, at a safe distance from iron-smelting works. A marked characteristic of western design as compared with the houses of the East of England, was the elaboration of ornamental forms in the timber work itself. The old carpenters used the timber as it came to hand, crooked or straight, but always with an eye to the picturesque as well as the useful, and this was seen specially in the designs contrived by using the bent and twisted pieces of wood in the curved braces and filling pieces in the half-timbered houses of the west of England. The timber work of the west was generally cruder and coarser in character than that found in the east of England and the Weald of Kent, and Mr. Reginald Blomfield attributed this to the presence of the Flemings, who, no doubt, taught the English builders some of their admirable skill in craftsmanship.

All through the XVIIth century English carpenters generally followed the traditional details and construction in use for the past 200 years, and the change gradually took place in the introduction of classic detail, grafted on to the old methods of construction. Few buildings of any importance were built of timber after the end of the XVIIth century, and up to this time they were doubtless designed, as well as executed, by the same craftsmen.

The floors and ceilings of the Middle Ages formed an integral part of the construction of the buildings. The floors of the rooms were generally formed of large square beams resting on wooden plates, which also formed the cornice of the rooms. These joists and beams were frequently moulded and carved and the spaces between filled in with plaster or wood. In other cases the underside of the floor joists were covered with boarding divided by ribs into panels with bosses at the intersections, carved with foliage, coats-of-arms, or other ornament. Many of these old ceilings and church roofs bore traces of colouring, and, though dimmed by the hand of time, still bore testimony to the splendour of our old buildings when decorated from floor to ceiling with colour. We could hardly realise what the effect must have been in the coloured pavements, frescoed walls, the stained glass windows, in the rood lofts and screens—the lower panels filled with paintings of the Apostles and saints—and in the sepulchral monuments, and in the roof. Doorways were a frequent subject of decoration, and it was generally here, and in the fireplaces, that the craftsman exhibited most of his skill and power of design. The earlier examples consisted of ledges to which the vertical boards were nailed—a method of construction in use to-day; very frequently the door was decorated externally with tracery planted on, in imitation of the stonework of the windows. Later, the doors were divided up into small panels, with moulded stiles and rails.

As to the inside of dwellings in mediæval days, the three chief methods of decorating the walls of rooms were by panelling, by hanging with tapestry, and by painting, the last being an imitation of curtains or tapestry hangings, or else painted with subjects of romance and legend. Probably the earliest wood panelling was of deal imported from Norway, generally stained or painted green, and a room like this was made at Windsor Castle for Henry III. There was little doubt that till the end of the XVIIth century much wood and stonework was coloured. The development of wood panelling was interesting, and was typical of the evolution of design in this country. In Mr. Gotch's "Early Renaissance in England" this is fully dealt with. Before the XVIth century it followed the Gothic manner, and was constructed on a substantial scale, the framing being formed of wood uprights and cross-pieces. The uprights were some 18 in. or so apart, and the cross-braces perhaps 4 ft. or 5 ft. according to the height of the room. The spaces between were filled with one piece of board let into the surrounding framework, which was sometimes splayed or moulded. The panels in Gothic work were ornamented with cusping, or tracery, or with paintings. Gradually the heaviness of the framework was reduced, and the stiles and rails, though remaining the same width, became only an inch or so in thickness. The panels were made narrower. Moulding and splaying the margins of the wood framing was long retained. At first the mouldings and the splay on the horizontal rails died out before it reached the upright stiles; then it was mitred in the solid, and eventually it was planted on separately until, in later years, we had the large bolection mouldings so characteristic of Wren's work. Thus one had the extension of panelling until it covered the whole of the walls of rooms, and it only died out when wallpapering came into fashion. In the so-called Gothic times we found the upper portions of the panels filled with tracery, and this developed into the carved panels of Henry VIII.'s and Elizabeth's time, with heads surrounded by ornament. Then there was the thoroughly English treatment of the linen panels. Gradually the panels, at first decorated with tracery, etc., became plainer and simpler, and the ornament was confined to the frieze or upper panels. The monotony of the repetition of rows of panels was broken up by the introduction of pilasters, on which most of the ornament was now lavished. All this panelling formed the actual decoration of the rooms themselves, and took the place of tapestry; and each room was a complete design in itself, and the intention was to convey a sense of continuous covering to the walls. Sometimes the panels were filled with semicircular arches, carried on pilasters with caps and bases—a treatment frequently met with in the oak chests of the period. Occasionally, instead of carving the actual wood itself, the projection was got by cutting the ornament out of another piece of wood and planting it on the surface. The first indications of the Renaissance or Classical feeling in the design of woodwork in this country dated from the commencement of the XVIth century, in Henry VIII.'s reign—and the first important work in decoration by Italian workmen was at Hampton Court Palace by Wolsey, in 1515, and in the tomb of Henry VII., in Westminster Abbey. The influence of these men were productive of much graceful carving and detail, but the style was too severe for the English craftsmen to handle, and it was really through the medium of the Low Countries that it became grafted in this country later in the century. Classical architecture was the mainspring of the design—whether it came from Italy direct, or through the coarser channels of Germany and Flanders. Perhaps the finest example of woodwork in this country, if not in Northern Europe, was the screen in King's College Chapel, Cambridge. It might safely be dated between 1532 and 1536, as the arms and badges of Henry VIII. and Anne Boleyn were on it. It was thoroughly Italian in design, and so obviously foreign in character that there was no doubt on this point. Like the work of the Italians at Hampton Court, and elsewhere, it was an isolated example, and had but small influence on the English craftsmen at the time, and until the end of the XVIth century the Gothic tradition still lingered on in this country, and for many years it was only in such small objects as tombs, screens, chantries and the minor details of larger buildings that the new style showed itself. After the Italian influence died out the Flemings favoured the East Coast, and at first we found a mixture of crude classic detail and grotesque ornament, applied without knowledge or much skill, yet at the same time possessing remarkably picturesque effects, and a certain rough originality. Some of the finest specimens of this essentially English type of work were to be found in the halls of the colleges and of our large houses. The roofs, until the general use of plaster ceilings, were still almost Gothic in form and construction, though the detail was classic in character. The roof of the Great Hall at Hampton Court—built by Henry VIII.—showed this very clearly, for, whilst it was essentially late Gothic in construction, yet the pendants were composed of Renaissance detail, based on Italian models. The door, doorways, chimney-pieces, and monuments, as in earlier times, were objects of very lavish treatment, and much elaboration was bestowed upon them—the chimney-pieces especially, and, whether in wood or stone, were generally treated in the same manner. The fireplace opening was flanked on either side with columns or pilasters carrying an entablature of architrave, frieze, and cornice; above this was another order of the same kind, and the

space between filled with the coats of arms of the owner or carvings of arabesques. Frequently the upper part was divided by arches and smaller pilasters, freely treated with carving and ornament; but while in keeping with the general panelling of the room, the chimney-piece, as a rule, was always made the chief feature. The commencement of the XVIIth century, or even earlier, saw the last of the rich open roofs and wooden beamed ceilings of mediæval days, and plaster ones took their place. For many years these were based upon the flat-boarded ceilings of the late Gothic joiners—with moulded wood ribs and bosses at the intersections. The wood ribs were now replaced by plaster, and as this material, being plastic, allowed freer handling, they gradually developed into ribands and strapwork, spirals and scrolls, and all the multifarious forms we found in the ceilings of old houses. Gradually, as the XVIIth century progressed, the German influence died out, and the wild exuberance of the Elizabethan craftsmen and designers merged into a more refined and dignified style, of better proportion and less lavish display of ornament. With Inigo Jones came a broader and more scholarly knowledge of Italian architecture and detail, and though based almost entirely on classical influences, yet the woodwork of this perion retained a character essentially English and soon lost any traces of foreign influence. The workmanship was of the best, the construction admirable, and the design well suited to its purposes. As to the influences that gradually changed the styles of woodwork in England, broadly speaking, they followed the contemporary architecture of the time, and, indeed, formed part of it. Towards the close of the XVIIth century Sir Christopher Wren had been for some years rebuilding London after the Great Fire, and he had gradually gathered around him a school of craftsmen and carvers whose influence upon the work of the country was far-reaching. It was indeed an age of constructive joinery and beautiful carving, and, whether in oak or in deal, one single style and tradition permeated the whole country, and we were particularly rich in examples of this peculiarly English work in our city churches, country and town houses. The panelling and woodwork of Inigo Jones and Wren was designed from a different standpoint to that of the preceding centuries, and its arrangement formed part of the architectural scheme of the whole building, not of the individual room only.

This type of work continued until the beginning of the XIXth century, after which, in design and detail, it lost its breadth of treatment and became thin and wiry-looking, although the workmanship and material was still admirable. With the Victorian era, the last lingering tradition in design died out, and a period of chaos set in. Architecture was perhaps at its lowest ebb, and woodwork followed in its wake. And this brought them back to one thing worth remembering—that throughout all the years when architecture flourished and was a living art, the woodwork was the same, and beautiful work was the result; but as soon as there ceased to be any real tradition in architecture, so at the same moment good design and workmanship in woodwork, as in all the other crafts, died out. The two were inseparable; they always had been and always would be.

A vote of thanks was accorded to Mr. Dawber for his lecture, and the proceedings terminated.

BOARD SCHOOL ENLARGEMENT, DUFFUS.—The Duffus Board school has been enlarged by the erection of a large hall and additional classrooms, etc. The contractors for the work have been:—Masons, Messrs. Miller Brothers, Hopeman; carpenter, Mr. George Main, Burghead; slaters, Messrs. Andrew Davidson & Son, Elgin; plumber, Mr. John A. Russell, Elgin; plasterer, Mr. John Ross, Elgin; painters, Messrs. John Kintrea & Son, Elgin; fittings, Mr. George Main, Burghead; grates, Messrs. Smith & Wellshead, Bonnybridge. The architect was Mr. D. J. Corrigall, of Keith.

THE SURVEYORS' INSTITUTION.

AN ordinary general meeting of the Surveyors' Institution was held on Monday, at No. 12, Great George-street, S.W., when a paper on "The Irish Land Bill, 1908," was read by Mr. G. R. M. Hewson.

In the course of his remarks the lecturer said that since 1860 he did not know how many Land Bills had been introduced into Parliament, but twenty-two had been passed into Acts, and if he mistook not, at least half of those had been described by their sponsors as a final settlement of the question.

The success of the Act of 1903 had far exceeded the anticipation of its authors, agreements for purchase representing nearly eighty millions of money having been entered into and lodged with the Land Commission. Its very success had created difficulties, chiefly financial, which it was suggested should be remedied by the new Bill, and it was his object to consider how far this new Bill would help or hinder the rapid transfer of land in Ireland from owner to occupier.

The author then dealt with the various proposals of the Bill. In speaking of clause 43, he said it abolished the principle of fixity of tenure in all lands held in fee simple that were not tenanted or subject to an annuity to the State. If the clause was passed, any land so held might be acquired compulsorily at a price to be fixed by the Land Commission. The method of the Estates Commissioners in valuing land hitherto had been to send one of their inspectors, who estimated what he considered would be a fair juidicial rent if the place were in the hands of a tenant; this rent was valued at a capital sum repayable by an annuity (terminable in about 68½ years) at least 20 per cent. less than the fair rent, and this sum was offered to the vendor.

The fee simple value was apparently entirely ignored. All the evidence given by Estates Commissioners and Congested District officials before the Dudley Commission went to show that their estimate of the price of land was the value it would be to them, not what it was worth to the vendor, or what it would fetch in the open market. This was not the system of value that obtained when lands were taken compulsorily for a railway or for other public purposes. Compulsion was no doubt necessary to acquire land at less than its value, but it hardly seemed wise to overload the Land Commission when, according to their returns, they had been offered about 27,000 acres of untenanted land which they had not yet been able to inspect.

The author dealt with other proposals of the Bill.

A discussion followed, and a vote of thanks was heartily accorded to the author.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday, in the County Hall, Spring-gardens, S.W., Mr. R. A. Robinson, Chairman, presiding.

Loans.—Sanction was given as follows:—Lambeth Borough Council to borrowing 5,000*l.* for contribution towards an open space, and to Wandsworth Borough Council to borrowing 10,350*l.* for contributions to street improvements and for wood-paving works.

Road Conference.—It was agreed that Mr. A. Shirley Benn, with the Chief Engineer of the Council, be authorised to attend, as representing the Council, the road conference convened by the County Councils' Association to consider the resolutions passed at the first International Road Congress lately held in Paris, on the understanding that the Council is in no way committed as to its future policy in the matter.

Street Widening.—It was agreed:—

That the estimate of expenditure on capital account of 9,450*l.*, submitted by the Finance Committee in respect of the widening of Albion-road, be approved.

That the estimate of expenditure on capital account of 6,100*l.*, submitted by the Finance Committee in respect of the acquisition of Nos. 27 and 29, High-street, Putney, and the widening of the road at these premises, be approved.

Memorial Tablets.—The Local Government Committee recommended, and it was agreed, that the undermentioned houses of historical interest be commemorated by means of memorial tablets:—(i.) No. 61, Greek-street, Soho, a residence of Thomas De Quincey; (ii.) No. 32, Soho-square, a residence of Sir Joseph Banks.

They have suggested to the Duke of Westminster that the residences of Warren Hastings at No. 40, Park-lane, Mendelssohn at No. 4, Hobart-place, and Viscount Hill at No. 24, Belgrave-square, which houses are situated on the Grosvenor Estate, should be commemorated by means of memorial tablets.

Acting on the Committee's suggestion, the City Corporation decided to affix to the "Cedars," Portway, West Ham, a tablet commemorative of the residence of Elizabeth Fry, the prison reformer. The tablet has now been affixed.

Protection of Ancient Monuments and Buildings.—The Committee reported as follows:—

"On March 31, 1908, the Council decided to approach His Majesty's Government with a view to the reference to the Royal Commission appointed to make an inventory of ancient monuments in Scotland, and to specify those worthy of preservation, being extended to or a similar inquiry being undertaken in respect of England and Wales.

A Royal Commission has been appointed to make an inventory of the ancient and historical monuments and constructions connected with or illustrative of the contemporary culture, civilisation, and conditions of life of the people in England from the earliest times to the year 1700, and to specify those which seem most worthy of preservation.

H.M. Office of Works has, at our request, furnished the Council with a list of the ancient monuments and historic buildings in England and Scotland at present in the charge of that department."

Displacement of Population, 1909.—The Parliamentary Committee reported as follows:—

"We have had before us a return, prepared by the statistical officer, showing the probable displacement of population in London through the proposed acquisition of houses in connexion with the various Bills deposited in the present session of Parliament. This return shows that out of a total of 646 persons to be displaced, 421 are of the working class; and that of 189 tenements proposed to be acquired, 140 tenements are occupied by persons of the working class. The Housing of the Working Classes Act, 1903, requires rehousing accommodation to be provided where as many as thirty persons of the labouring class are displaced in the administrative County of London under the provisions of any Bill. Prior to that Act the limit below which rehousing was not required was twenty houses in any metropolitan borough. The most important result shown by this return is the small proportions to which the displacement of persons of the working class under statutory schemes has now fallen, the proposed displacement in regard to the schemes of the session 1909 being much less than in previous sessions, as will be seen from the figures as follows:—1904, 2,121; 1905, 2,858; 1906, 4,884; 1907, 4,239; 1908, 2,023; 1909, 421."

Theatres, Music-halls, etc.—The Theatres and Music Halls Committee reported that they had considered drawings with regard to the undermentioned premises. The arrangements shown on the drawings appear to be satisfactory, and the applicants have been informed that, subject to certain conditions being observed, the Council has no objection thereto:—

Freemason's Tavern, Great Queen-street.—Extension of the premises to Middle-yard.

Hampstead Conservatoire, Eton-avenue.—Seating arrangements.

Holborn Empire, High Holborn.—Limelight chamber at rear of gallery.

London Exhibitions Buildings, Earl's-court.—Furniture exhibition from February 24 to March 9, 1909.

Palace Theatre of Varieties, Cambridge-circus.—Alterations to ladies' lavatories on the stalls, first circle, and amphitheatre levels.

The drawings with regard to the undermentioned premises were also agreed to:—

Euston Theatre of Varieties.—Cinematograph chamber at the rear of the gallery seating (Messrs. Wylson & Long).

Hicks Theatre.—Movable screen to shut off a portion of the dress circle seating (Mr. O. Barrett).

King's Theatre, Tooting.—Gas lighting and heating, electric wiring, and fire mains (Messrs. Emden, Egan, & Co.).

Open-air Schools.—The Education Committee recommended, and it was agreed:—

That the estimate of expenditure on maintenance account of 4,400*l.*, for the financial year 1909-10, submitted by the Finance Committee in respect of the establishment of open-air schools for the year 1909, be approved.

That, subject to the maintenance votes, 1909-10, including the necessary provision therefor, and to the sanction of the Board of Education, open-air schools providing accommodation as severally indicated below, be held from the period immediately following the Easter holidays, 1909, to the end of October, 1909, on the undermentioned sites:—(i.) Birley House, London-road, Forest-hill, S.E. (seventy-five children); (ii.) Shrewsbury House, Shooter's-hill (100 children); (iii.) a site to be hereafter determined (100 children).

That an agreement be entered into with the Trustees of the Crole-Wyndham Convalescent Home, Shrewsbury House, Shooter's-hill, for the use by the Council of a site in the grounds attached to Shrewsbury House for the purpose of an open-air school from immediately after the Easter holidays, 1909, to the end of October, 1909. . . .

Schools.—It was agreed:—

That the estimate of expenditure on capital account of 217*l.*, submitted by the Finance Committee in respect of taking out and lithographing quantities in connexion with the erection of a school on the Torriano-avenue site (St. Pancras, E.) for the accommodation of 645 children, be approved.

That the estimate of expenditure on capital account of 192*l.*, submitted by the Finance Committee in respect of taking out and lithographing quantities in connexion with the erection on the Haverstock-hill site (St. Pancras, W.) of a higher school for 480 children, be approved.

School Sites.—It was agreed that the settlements of the claims as set out below, in respect of the acquisition of properties in connexion with the undermentioned sites, required for educational purposes, be approved and forwarded to the Finance Committee, with a view to the payment of the money:—(i.) London County Council Stockwell Secondary school (Brixton), freehold interest, with vacant possession, of the Ecclesiastical Commissioners in land in Isabel-street and Liberty-street, amount of settlement 1,750*l.*, with fees of 26*l.* 5s., and a fee for solicitor's preliminary costs; (ii.) North-West London Training College (St. Pancras, N.) (*a*) interest of Lord Mansfield in the Gothic-hall, Grove-farm, etc., amount of settlement 18,000*l.*, and (*b*) interest of Miss S. C. Chalmers in the "Elms," amount of settlement, 3,500*l.*; and that the valuer and the solicitor do complete the purchases.

Repairs to Buildings on Schedule.—The following recommendation was agreed to:—

That the completion of the contract with G. Parker, in pursuance of the resolution of December 22, 1908, under the title of G. Parker & Sons, for carrying out repairs to school buildings in certain electoral divisions on the printed schedule of prices, be approved.

Northern Low-level Sewer: Sect. 5.—The Main Drainage Committee recommended, and it was agreed:—

That the resolution of December 22, 1908, relative to the acceptance of the lowest tender received for the construction of sect. 5 of the northern low-level sewer No. 2, be rescinded.

That fresh tenders be invited, by public advertisement, for the construction of sect. 5 of the northern low-level sewer No. 2.

A clause providing that preference must be given in employment of casual or unskilled labour to men *bonâ fide* resident in London will be inserted in the form of contract.

Sir J. McDougall said the Main Drainage Committee had no right to put a clause into a contract before it had been before the Council.

Sewer Works.—It was agreed that the estimate of expenditure on capital account of 150*l.*, submitted by the Finance Committee in respect of preliminary expenditure in connexion with the extension of the middle-level sewer No. 2, to the county boundary at Kilburn-lane to receive the sewage and drainage of the Brent area of the parish of Willesden, be approved. That tenders be invited by public advertisement for the extension of the middle-level sewer No. 2 from Formosa-street, Paddington, to the county boundary at Kilburn-lane.

Laying of Ducts.—It was agreed that a line of cable ducts be laid in Hampstead-road on behalf, and at the cost, of the St. Pancras Metropolitan Borough Council; that the work be executed by John Mowlem & Co., Ltd., as an extra on the contract entered into with them and reported on October 20, 1908, for laying cable ducts in Hampstead-road, etc.

Paving Proposals, Victoria-embankment.—It was agreed:—

That, as a matter of urgency within the meaning of standing order No. 353 (2), the special estimate of expenditure on maintenance account of 750*l.*, submitted by the Finance Committee in respect of the cost of carrying out certain paving works to the carriage-way of the Victoria-embankment, be approved.

That the offer of the Trinidad Lake Asphalte Paving Company, Ltd., to execute the paving works referred to in the foregoing resolution, and to maintain the same for a period of five years at an inclusive price of 9s. per yard super., be accepted.

Widening.—The Council agreed that the estimate of expenditure on capital account of 900*l.*, submitted by the Finance Committee in respect of the widening of Fortess-road, in accordance with the plan, be approved.

Standing in Places Licensed for Public Entertainments.—The Theatres and Music-halls Committee submitted a report on this matter. They reported as follows:—

"As a result of further careful consideration of the subject and of negotiations and interviews with the representatives of the proprietors of theatres and music-halls, we have come to the conclusion that the best way of dealing with the question is to fix a maximum time for the exit of the audience, and to say that so long as this time be not exceeded, the only restrictions that need be placed upon the number of persons admitted are the following:—(1) The intersecting gangways to be kept absolutely clear; (2) sufficient room for passing easily to and fro to be maintained in the gangways and passages at the sides and rear of the seating.

We consider that three minutes should be regarded as a reasonable time within which an audience must be able to discharge itself from a place of public entertainment, and the proprietors of theatres and music-halls have intimated to us, through their representatives, that they concur in our view, and that the proposed method which we have indicated above of dealing with the question of standing in places of public entertainment will be welcomed by them. We have also been in correspondence with the Lord Chamberlain on the subject as regards the theatres licensed by his lordship, and we are glad to be able to state that, if the Council decides to amend its rules as we suggest, a corresponding alteration will be made in the regulations of the Lord Chamberlain. It is obvious that if the Council adopts our proposal it will be necessary to time the departure of the audiences from the various theatres and music-halls, and we have received assurances that the proprietors will afford the Council's officers every assistance in their power in discharging this duty. They consider, however, and we concur, that the time taken by the audience to leave the auditorium and not the time taken to reach the street should be the time to be considered by the Council. A beginning has already been made, and in most of the cases dealt with up to the present it has been found that the auditorium has been cleared in less than three minutes. After a very exhaustive consideration of the whole question, we are of opinion that the adoption of our proposals will prove a satisfactory solution of a very difficult question, and will afford every reasonable assurance of safety for the public, while not inflicting any unnecessary loss or restriction on the proprietors of places of public entertainment. We recommend:—

(*a*) That as regards any place of public entertainment licensed by the Council the auditorium of which, when full can be cleared in three minutes, no restrictions be placed on the number of persons admitted except that (i.) the intersecting gangways must be kept absolutely clear, and (ii.) sufficient room for passing easily to and fro must be maintained in the gangways at the sides and rear of the seating.

(*b*) That in order to give effect to the foregoing resolution (*a*) Nos. 5 and 6 of the rules relating to premises licensed by the Council which are as follows—'(5) Persons must not be permitted to stand or sit in any of the gangways,' and '(6) overcrowding must not be permitted in any part of the premises,' be rescinded, and that the following be substituted therefor, and be also required to be inserted in the notice to be printed on the programme of the performance (Rule 48)—'Persons must not be permitted to stand or sit in any of the intersecting gangways, and, if standing be permitted in the gangways at the sides and rear of the seating, sufficient room must be left for persons to pass easily to and fro.'"

Sir J. McDougall moved that the recommendations be referred back, so that the advice of the Fire Brigade Committee could be obtained as to the safety of the public.

Mr. Gosling seconded, and after a lengthy debate the amendment was defeated on a show of hands. On a division there voted for the amendment thirty-two, against fifty-nine. The recommendations of the Committee were then agreed to.

Albert Hall and Fire Precautions.—Mr. Stuart Sankey asked whether any precautions against fire were taken at the Royal Albert Hall, whether the building was inspected by the Council's officials, and, if not, whether this was not the only building which was not so inspected.

Mr. Greenwood, Chairman of the Theatres Committee, replied that the Royal Albert Hall had not been inspected by the Council, nor had the Council been asked to make an inspection of the building. The facts with regard to the Hall were reported to the Council on July 10, 1906. According to the terms of the charter, the Hall was exempt from the necessity of being licensed for music, and also from the requirements of the London Building Acts. It was, of course, an anomaly that such a building should not be subject to inspection and supervision, and in view of its large size it would, in his opinion, be well for the safety of the public if it were brought into the same category as other places of amusement.

Having transacted other business, the Council adjourned.

WESTMINSTER CITY COUNCIL.

THE usual fortnightly sitting of the Westminster City Council was held on Thursday last week, when the following matters were dealt with:—

Wood-paving Contract.—The City Engineer reported that the contract with the Improved Wood Pavement Company, Ltd., for the maintenance of an area of wood pavement in the Strand, near Wellington-street, would expire on December 31, whilst the company's maintenance contract for another area in the Strand east of Wellington-street would expire on December 31, 1914. The two areas were within a larger area which is being maintained by the company under a contract which will not expire until May, 1915. The Council has adopted the principle that on the termination of existing wood-paving maintenance contracts they shall themselves maintain the pavements, but as the circumstances in this case were exceptional it was decided to extend the contract till 1915 so as to prevent confusion.

Charing Cross Subways.—By an agreement with the Council in 1905, the Baker-street and Waterloo Railway Company undertook to construct a subway for foot passengers from the company's station in Trafalgar-square to the south side of Charing Cross, and also to pay the Council the sum of 6,000*l.* for removing the public convenience at Charing Cross to a position 30 ft. westward from their present site. The company had now inserted a clause in a Parliamentary Bill for the cancellation of the agreement. The Council had a letter from Sir Henry Tanner, of H.M. Office of Works, stating that the new buildings at the east end of the Mall will be completed by about the end of the year, and it will be possible to open the road through into Charing Cross, and asking what is to be done with regard to the alterations to the refuges, etc., to the north-east of the statue of King Charles I. It was decided to write to Sir Henry Tanner explaining the position, and with a view to obtaining the co-operation of H.M. Office of Works in opposing the company's Bill.

Rutland-gardens.—In reply to a request that paving might be laid by the Council in Rutland-gardens, it was resolved to inform the householders that this was a private road, but if the cost was borne by the owners the Council would consider the question of taking over the road.

Trial Petrol Motor-wagon.—With reference to the offer of Leyland Motors, Ltd., to supply a petrol motor-wagon for trial purposes, it was agreed that the Council should give such trial during the watering season if the company provided the wagon, a driver, and all accessories for the inclusive charge of 35s. a day.

Grosvenor Canal Property.—The Buildings Committee reported at some length on the question of the utilisation of the Grosvenor Canal property of the Council, and made the following recommendations:—(*a*) That the land on the east side of the lock of the Grosvenor Canal be allotted for the purposes of the Highways Department; (*b*) that a portion of the land on the west side of the lock, within a line drawn parallel to the north wall of the lock-master's house, be utilised for the erection of a combined building for the purposes of the Highways and Public Health Departments; (*c*) that Mr. Murray be instructed to prepare and submit to us drawings and specification of the proposed building, together with an estimate of the cost and a report as to the foundations; and (*d*) that the City Engineer and Surveyor be instructed to prepare plans and specification for the construction of the proposed roadway, and to submit to the Council an estimate of the cost.—Agreed.

MUSIC-HALL, COATBRIDGE, GLASGOW.—Messrs Robertson & Dobbie, architects, Glasgow, have measured off ground at Coatbridge for the erection of a music-hall. It will be erected by the Scottish Provincial Hippodrome Company, Ltd., and will accommodate 2,500.

THE BUILDER

FEBRUARY 13, 1909.

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MEETINGS.

FRIDAY, FEBRUARY 12.

Edinburgh Architectural Association. — Associates' Annual Dinner.

The Royal Institution.—Professor H. A. Wilson, M.A., D.Sc., on "Electrical Properties of Flame." 9 p.m.

Glasgow Architectural Craftsmen's Society.—Mr. Vernon Constable on "The Personal Factors in Italian Renaissance Architecture." 8 p.m.

Junior Institution of Engineers (at Royal United Service Institution, Whitehall).—Meeting with the Architectural Association Debating Society. Paper on "Heat Transmission in Buildings," by Mr. Kenneth Gray, M.San.I. (Past-Chairman of the Institution). 7.30 p.m.

Institution of Civil Engineers (Students' Meeting).—The Second Vernon-Harcourt Lecture on "The Design and Construction of Docks," by Sir Whately Eliot, M.Inst.C.E. 8 p.m.

Manchester Society of Architects.—Professor Beresford Pite, M.A., on "The Growth of Design and Craftsmanship in English Woodwork." 6.30 p.m.

SATURDAY, FEBRUARY 13.

Architectural Association.—Third spring visit; (1) to the Holborn Town Hall, by permission of Messrs. Warwick & Hall. 2 p.m. (2) The new offices of the British Medical Association, Agar-street, Strand, by permission of Mr. H. P. Adams. 3 p.m.

MONDAY, FEBRUARY 15.

The Royal Institute of British Architects.—Mr. H. V. Lanchester on "Town and Country: Some Aspects of Town Planning," with lantern illustrations. 8 p.m.

Royal Society of Arts (Cantor Lectures).—Mr. Leon Gaster on "Modern Methods of Artificial Illumination."—I. 8 p.m.

University of London (South Kensington, S.W.).—Mr. Banister Fletcher on "Elizabethan and Jacobean Architecture"—Introductory. Illustrated. 8 p.m.

Royal Academy.—Lectures on "Sculpture," by Mr W. R. Colton, A.R.A. I. 4 p.m.

Institute of Sanitary Engineers.—Mr. H. Pritchard on "Treatment of Sewage." 8 p.m.

Regent-street Polytechnic Institute. — Mr. A. G. H. Thatcher on "Scaffolding: English Methods."

Liverpool Architectural Society (Incorporated). — Mr. T. T. Rees on "The Liability of Architects to Clients and Public." 6 p.m.

TUESDAY, FEBRUARY 16.

Institution of Heating and Ventilating Engineers (Incorporated).—The annual general meeting, Imperial Hotel, Russell-square, London, W.C., Room No. 2. Presidential address by Mr. Walter Yates, M.I.Mech.E., and paper by Dr. W. N. Shaw, Sc.D., F.R.S., on "Ventilation." 2.30 p.m.

University of London (Lectures on French Painters).—Mr. Percival Gaskell, R.B.A., on "The XVIIIth Century." 3 p.m. and 8 p.m.

Royal Institution.—Professor A. A. Macdonell, M.A., on "The Architectural and Sculptural Antiquities of India."—III. 3 p.m.

Royal Statistical Society (Royal Society of Arts, John-street, W.C.). — Professor W. Somerville, M.A., on "Forestry in some of its Economic Aspects." 5 p.m.

Institution of Civil Engineers.—Mr. S. J. Reed on "The Design of Marine Steam-Turbines." 8 p.m.

WEDNESDAY, FEBRUARY 17.

Carpenters' Hall, London-wall (Lectures on Art Connected with Building).—Mr. A. Romney Green, B.A.Cantab., on "The Influence of Tools on Design." 7.30 p.m.

Northern Architectural Association (Students' Meeting).—Mr. J. B. Cubey on "The Early English Period, with Special Reference to the Work at Darlington, Hartlepool." 7.30 p.m.

Edinburgh Architectural Association (Associates' Meeting).—Mr. A. K. Robertson, Architect to the Scotch Education Department, on "Planning of Scholastic Buildings." 8 p.m.

Institution of Civil Engineers.—Students' visit to the East Greenwich Gasworks of the South Metropolitan Gas Company.

THURSDAY, FEBRUARY 18.

Carpenters' Hall, London-wall. — The Rt. Hon. Viscount Dillon, F.S.A., on "Armour." 8 p.m.

Royal Academy.—Lectures on "Sculpture," by Mr. W. R. Colton, A.R.A. II. 4 p.m.

London Institution.—The Rev. Canon W. Benham, D.D., F.S.A., on "St. Paul's Cathedral," illustrated. 6 p.m.

The Concrete Institute.—The third general meeting of the Institute, at the Royal United Service Institution, Whitehall, when Mr. Serraillier will read a paper on "Certain Aspects of Reinforced Concrete."

FRIDAY, FEBRUARY 19.

The Architectural Association.—Mr A. Needham Wilson on "The Press and Architecture." 7.30 p.m.

The Institution of Mechanical Engineers.—Sixty-second annual general meeting. (1) The annual report of the Council will be presented; (2) the results of the ballot for the annual election of the President, Vice-Presidents, and Members of Council will be announced; (3) award of the Water Arbitration Prize to Mr. John Don, A.M.I.Mech.E.; (4) the prizes awarded by the Council for the best papers read by graduates during the session 1907-08 will be presented to Mr. C. W. Davson and Mr. A. MacKinnon; (5) paper to be further discussed, "The Filtration and Purification of Water for Public Supply," by Mr. John Don. 8 p.m.

Birmingham Architectural Association.—Mr. F. T. Baggallay on "Roman Architecture."

London Topographical Society.—The tenth annual meeting will be held in the Lecture Theatre, Burlington-gardens. An exhibition of London prints, maps, and views from 4 till 5 p.m. The Earl of Rosebery, K.G., will deliver the annual address at 5 p.m.

Institution of Civil Engineers.—Dr. W. C. Unwin, F.R.S., on "Standardisation in Engineering Practice." 8 p.m.

Fifty Years Ago.

FROM THE *Builder* OF FEBRUARY 12, 1859.

ROYAL INSTITUTE OF BRITISH ARCHITECTS.—ST. PAUL'S.

THE ordinary general meeting of the members of this Association was held on Monday evening last, at 16, Grosvenor-street; Mr. Henry Ashton, V.P., in the chair.

The minutes of the former meeting having been read and confirmed, Mr. Nelson announced some donations, amongst which were the *Revue Générale de L'Architecture*; from the Architectural Publication Society, the volume for 1857-8, part 2, with illustrations, some of which were copied from original drawings in the possession of the Institute; together with photographs representing Stonehenge, by Mr. E. B. Fisher, of Salisbury.

Mr. Godwin, Fellow, on the part of several members who took considerable interest in the progress of the Architectural Publication Society, claimed permission to address a few observations to the meeting in connexion with the donation from the Architectural Publication Society, which had just been announced. The part presented to the Institute that evening, which was the second for the year, was one of an exceedingly interesting nature. It contained twelve plates, each having several subjects upon it, there being in all more than sixty examples; and some of these plates were such as could not be produced in any other way than by the arrangements of such a society; for example, that of chamfer stops included a large number of specimens from the portfolios of half a dozen architects, or more. The observations which he was then addressing to the Institute were made with the express purpose of calling attention to what had been accomplished by this society, and in order that, through the published proceedings of that evening, its claims might be still further advocated with the profession generally. Many of the profession were scarcely aware that there had been already issued 180 plates, comprising some 800 or 900 subjects, which illustrated the Dictionary down to the beginning of letter D. Nearly one-third of the text was, he believed, already completed; and supposing that they could receive an accession of 250 or 300 members, the committee would be at once able to proceed with the completion of the work in a manner that would do credit to them, and be of service to the profession as well as to the art likewise, he ventured to hope. When it was remembered that these subjects were wholly contributed from the portfolios of members, and that the arrangement was entirely a labour of love, entailing, as was always the case, great exertions indeed on the part of a very few members of the society, it would be seen that the work possessed a strong claim on the profession generally.

*** The "Dictionary of Architecture," when completed, fully bore out Mr. Godwin's claims for it. It is now out of print (we fortunately secured a copy), and though it may require bringing up to the date of present-day knowledge in some particulars, it is still the best dictionary of architecture in the English language; the most careful and trustworthy in regard to historical facts; the authorities for all important statements are given; and it keeps to the true object of a Dictionary, that of giving information, not of putting forward æsthetic criticism.—ED.

Illustrations.

CATHEDRALS OF ENGLAND.

II. CANTERBURY.

THE view here given of Canterbury Cathedral is taken, as in the case of St. Paul's, from a point which is not actually accessible on the site. The south-west angle of the precinct is in fact the only position from which a general and comprehensive view of the greater portion of the building can be obtained. But for the purposes of a drawing the furthest point attainable within the precinct is too close, and includes too large an angle of vision. At the south-eastern portion of the precinct there is space enough for a comprehensive view, but the fine trees which in one sense form so great an addition to the general picturesque effect of the cathedral shut out too much for a complete architectural view, in which in any case the western towers would be reduced to a very subordinate position. The view of the central tower and part of the cathedral from the cloister on the north side is magnificent as a picture, but loses again a great deal of the architecture. Taking the south-west view therefore, as the only comprehensive one, the main lines of the building have been set out from the plan, as they would appear from a point of sight some little distance beyond the precinct. The principal heights, those of the towers, the roof ridge, eaves, etc., have been in like manner set out from the heights given in Britton's geometrical Elevations and Sections, which in regard to these principal measurements may safely be assumed to be correct. The details have then been filled in partly from sketches on the spot, partly from photographs, used, of course, only as memoranda of the actual facts of detail, which could thence be drawn in according to the assumed position of the spectator. Nothing in the drawing is copied from a photograph. Photographs are invaluable as memoranda, but illusive as representations, owing to their constant tendency to distort and misrepresent proportion.

It will thus be recognised that considerable pains have been taken to obtain accuracy of representation, and it is believed that the view of the cathedral here given may fairly claim that merit, so far as a building of such size and multiplicity of parts can be represented on a small drawing.

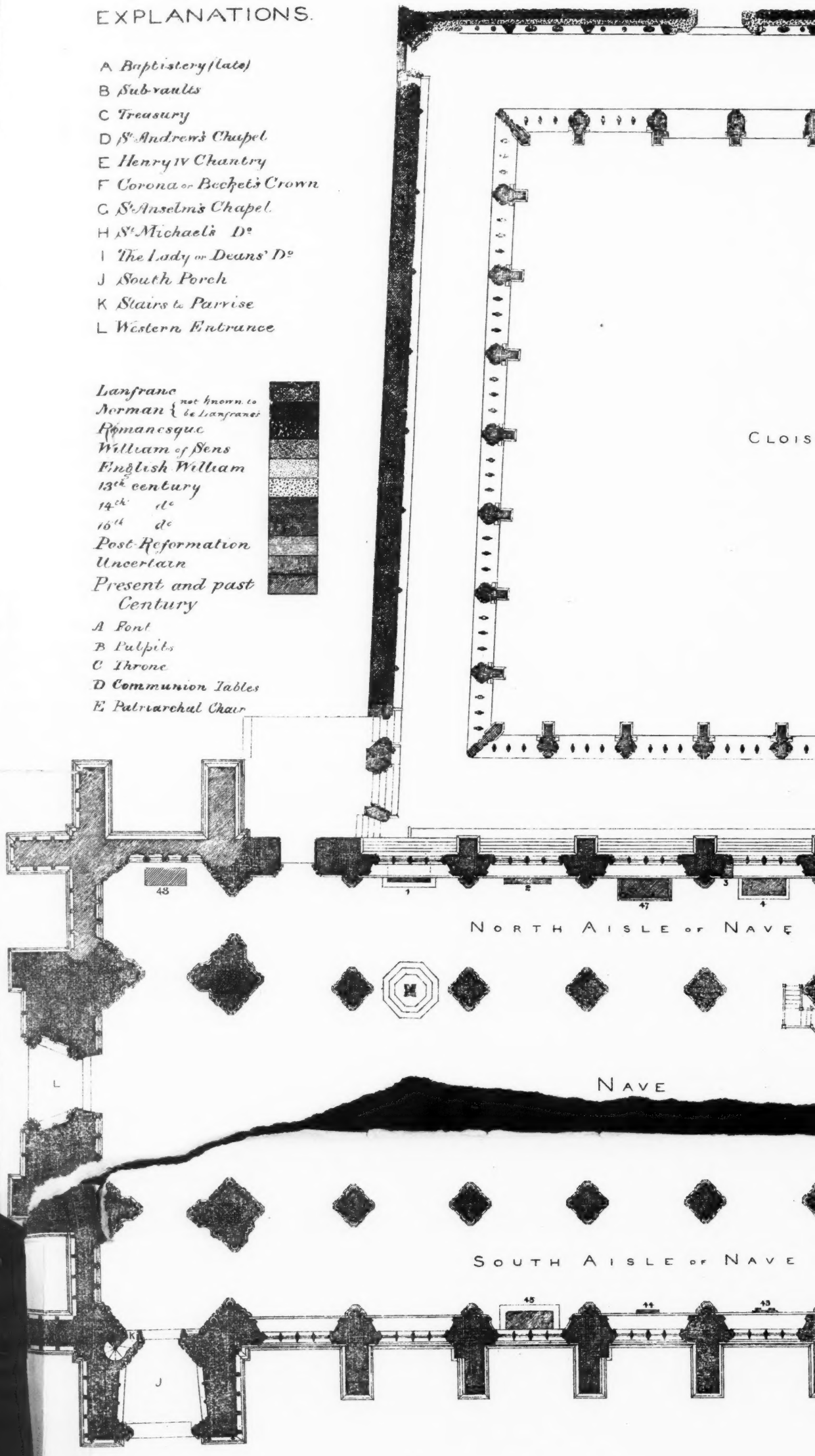
It is one of the most impressive characteristics of Canterbury Cathedral that it seems not so much a building as an assemblage of buildings. Promontory after promontory

EXPLANATIONS.

A *Baptistery (late)*
B *Sub-vaults*
C *Treasury*
D *St. Andrew's Chapel*
E *Henry IV Chantry*
F *Corona or Becket's Crown*
G *St. Anselm's Chapel*
H *St. Michael's Do*
I *The Lady or Deans' Do*
J *South Porch*
K *Stairs to Parvise*
L *Western Entrance*

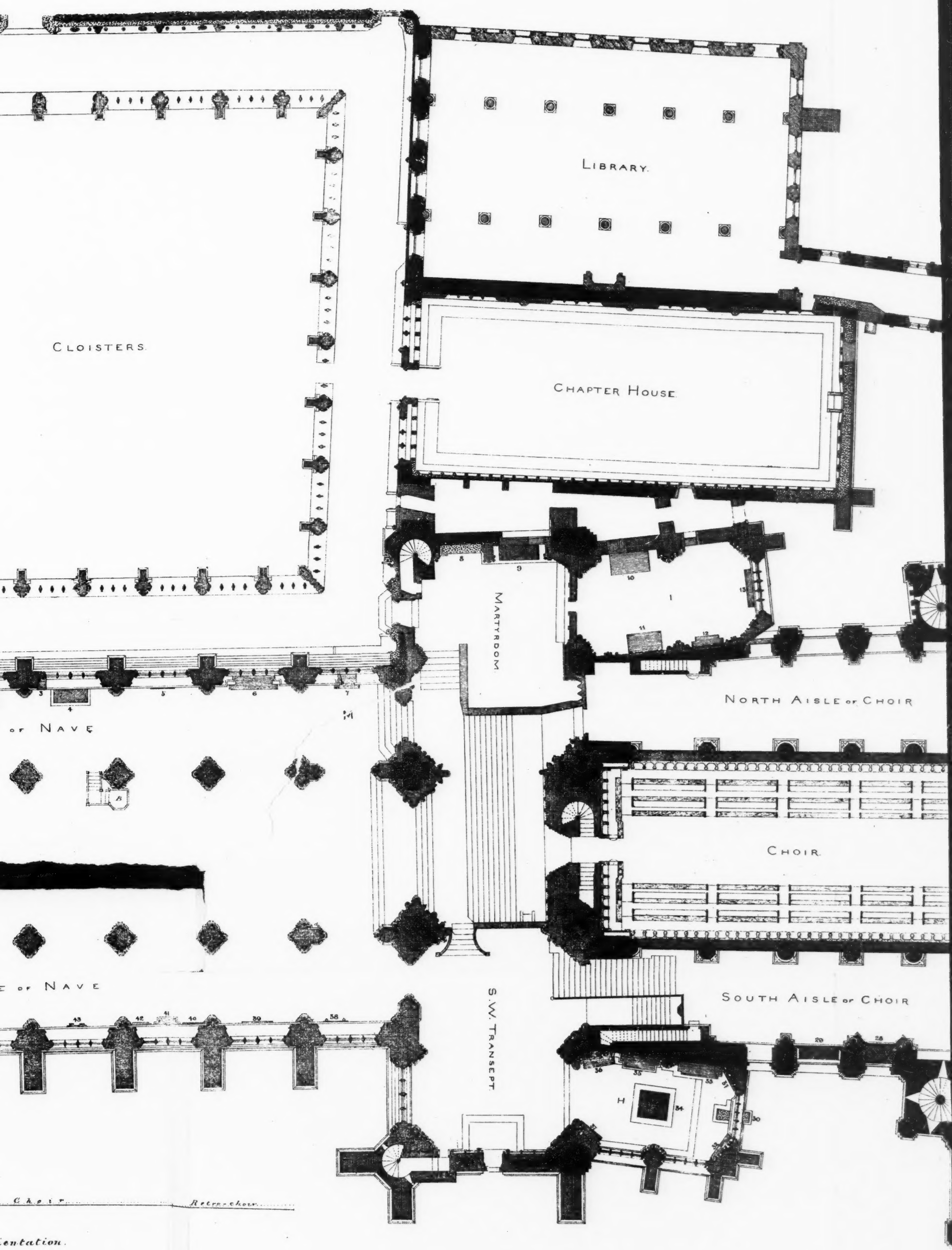
Lanfranc
Norman { *not known to be Lanfranc's*
Romanesque
William of Sens
English William
13th century
14th do
16th do
Post-Reformation
Uncertain
Present and past Century

A *Font*
B *Pulpits*
C *Throne*
D *Communion Tables*
E *Patriarchal Chair*



Angles of Orientation.

PLAN OF CANTERBURY CATHEDR



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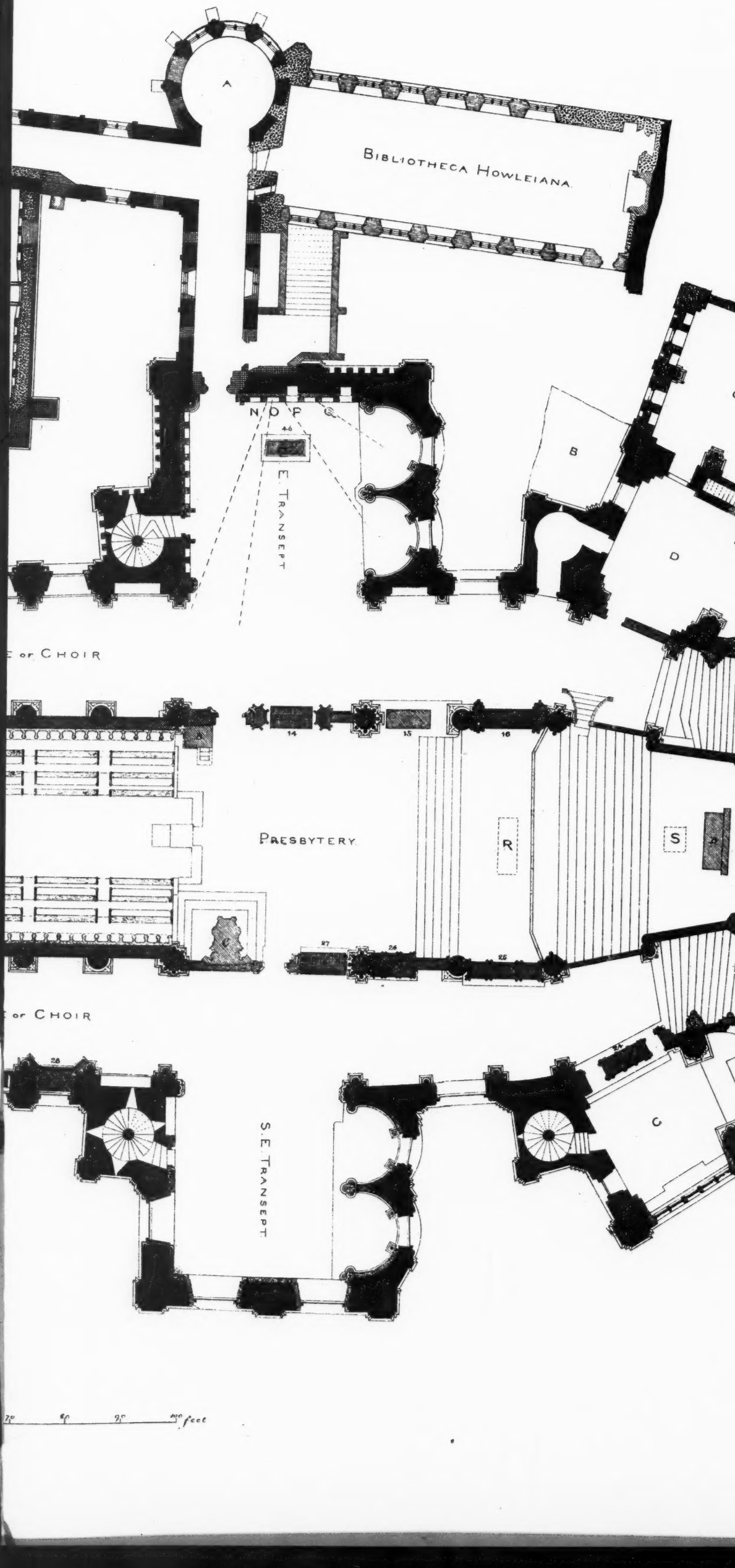
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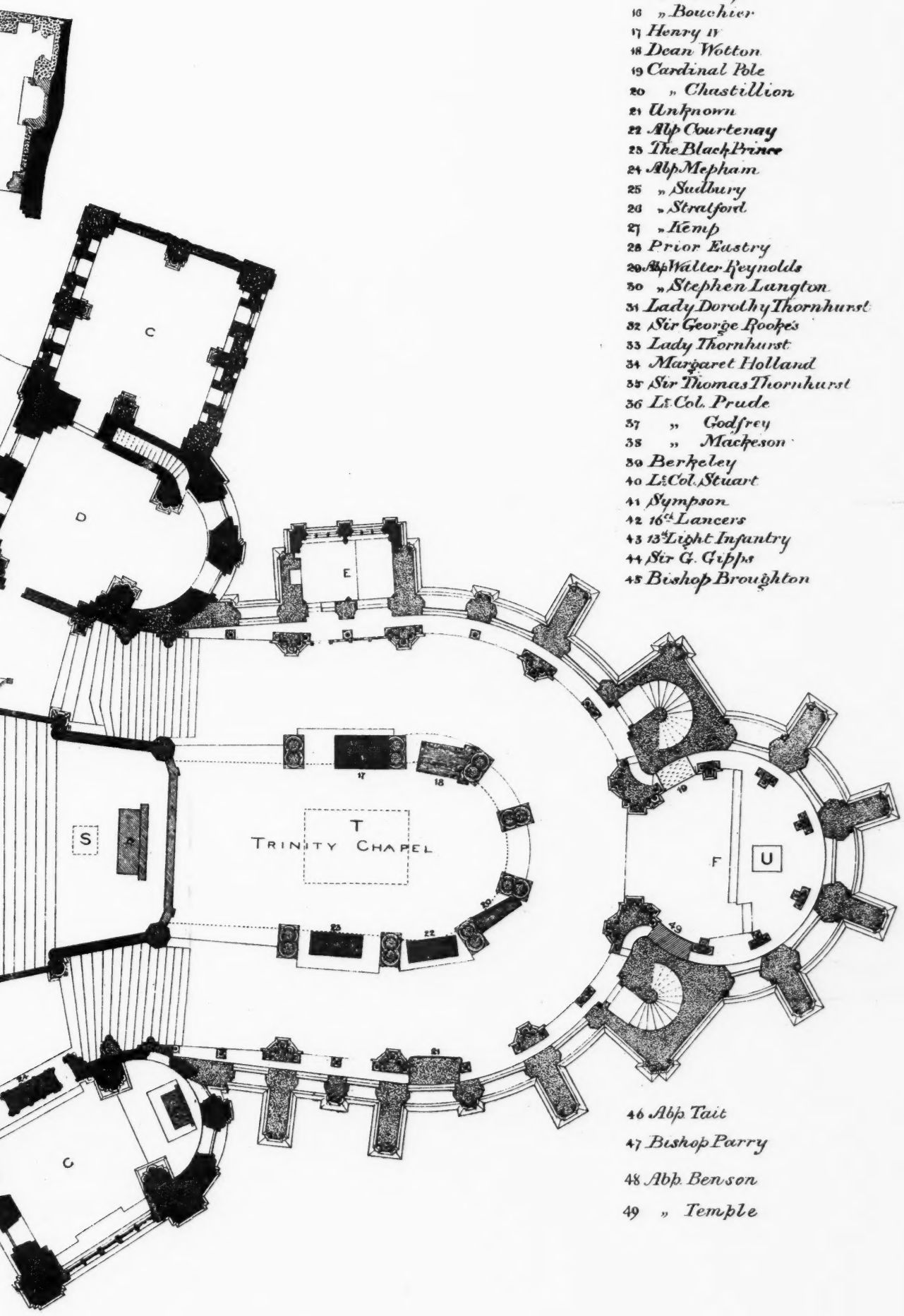
B
D
or Choir
14
15
16
Presbytery
R
S
27
24
25
or Choir
26
S.E. Transept
C
feet

EXPLANATIONS. *(Continued)*

M. *Former position of Lady Chapel*
N.O.P.Q. *Squints from Priest's Cham- in thickness of Wall.*
R. *Original position of Altar*
S. " " " *St Augustine's Chair*
T. *Site of Beckett's Shrine*
U. *Present Position of St Augustine's Chair.*

MONUMENTS.

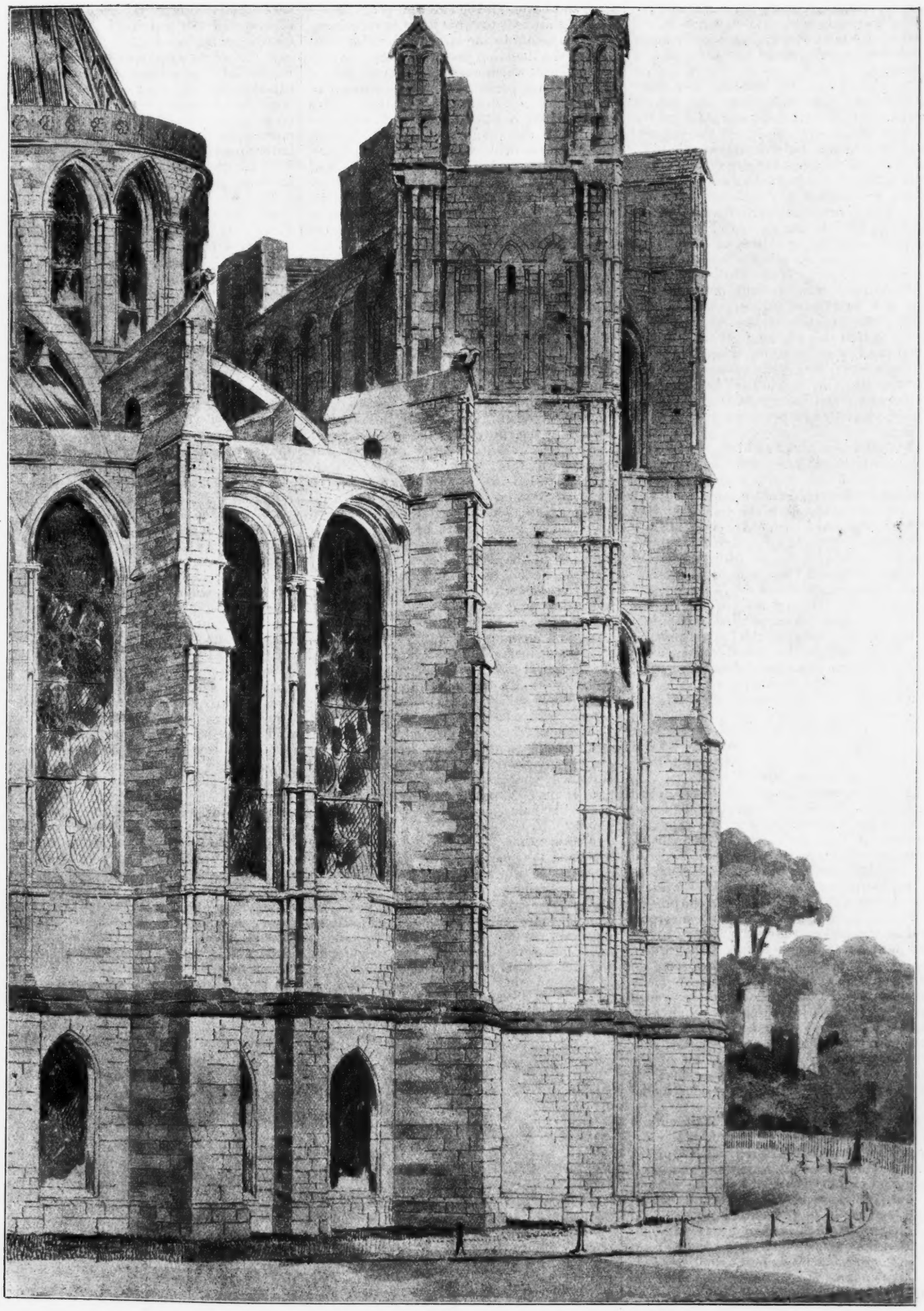
1 *Dean Lyall*
2 *50th Regiment*
3 *Orlando Gibbons*
4 *Abp Sumner's*
5 *31st Regiment*
6 *Sir John Boys*
7 *Sir James Hales*
8 *Abp Peckham*
9 " *Warham*
10 *Dean Rogers*
11 " *Fotherby*
12 " *Boys*
13 " *Neril*
14 *Abp Chicheley*
15 " *Howley's*
16 " *Bouchier*
17 *Henry IV*
18 *Dean Wotton*
19 *Cardinal Pole*
20 " *Chastillion*
21 *Unknown*
22 *Abp Courtenay*
23 *The Black Prince*
24 *Abp Mepham*
25 " *Sudbury*
26 " *Stratford*
27 " *Kemp*
28 *Prior Eastry*
29 *Abp Walter Reynolds*
30 " *Stephen Langton*
31 *Lady Dorothy Thornhurst*
32 *Sir George Rooke's*
33 *Lady Thornhurst*
34 *Margaret Holland*
35 *Sir Thomas Thornhurst*
36 *Lt Col. Prude*
37 " *Godfrey*
38 " *Mackeson*
39 *Berkeley*
40 *Lt Col. Stuart*
41 *Sympson*
42 *16th Lancers*
43 *13th Light Infantry*
44 *Sir G. Gipps*
45 *Bishop Broughton*



46 *Abp Tait*
47 *Bishop Parry*
48 *Abp Benson*
49 " *Temple*

Measured and drawn by G. Smith.

Reproduced by permission of the Dean, from the Plan in the Cathedral Library at Canterbury



Canterbury Cathedral: A Sketch at the South-east Angle. By Mr. H. H. Statham.

opens out as you walk round it eastward ; the eastern end by itself, necessarily lost here behind the Norman transept, is a grand study of piled-up masses, and the small tower at the re-entering angle of the choir aisle and the eastern transept, seen at a distance in the drawing, contains on a near view enough of rude but powerful detail to make a picture in itself.

The plan which we publish is a very complete and painstaking one, and reflects the highest credit on the care and ability of the architect, Mr. George Smith, of Canterbury, who drew it from actual measurements in 1883. The plan, nearly twice the size of this reproduction, now hangs in the Cathedral Library, and our readers will no doubt feel that they, along with ourselves, have reason to feel much indebted to the Cathedral authorities for permitting the publication of a plan which affords so valuable a record of the architectural history of the Cathedral.

Mr. Smith's plan, it will be seen, distinguishes the dates of various portions of the building by varieties of shading. But the mere fact that this portion is of the Norman period and that portion belongs to the XIIIth century, etc., easily enough perceived from the plan, does not in itself bring out the true meaning and history of these changes. Let us endeavour in a few words to sum them up here.

The foundation of the archiepiscopal cathedral dates from the time of St. Augustine, its architectural foundation in a sense probably from before that time, since it is recorded that St. Augustine made use in the first instance of a church which had been constructed already by Roman converts to Christianity. This was enlarged subsequently in 950, but when Lanfranc, abbot of Caen, one of the strong, gifted, and energetic characters who shine out from time to time in the history of the mediæval church, was appointed Archbishop of Canterbury towards the latter part of the XIth century, he found the ancient church in so ruinous a state that he, in 1070, pulled it down and commenced an entire rebuilding. Of the ancient church thus removed it is not probable that any fragment now exists. Having been originally built under Roman influence, it probably was of the Roman basilica type, with colonnaded aisles and an eastern apse.*

Lanfranc's church extended to less than half the length of the present cathedral, the tower being in the same position as now, and the masonry of Lanfranc's crossing piers being probably still existent within the body of the crossing piers as they now appear ; as is indicated on the plan. His western towers were in the same position as the present ones, and his masonry still exists incorporated in the wall of the south-western tower. The western transepts were on the site of the present ones, in which also some of Lanfranc's building is incorporated. These transepts, according to the almost universal custom of the period, would have an apse on their eastern side, and the choir would have terminated eastwards in a larger apse extending perhaps 50 ft. or so east of the crossing. It is of interest to note that the whole of Lanfranc's church was constructed in about seven years.

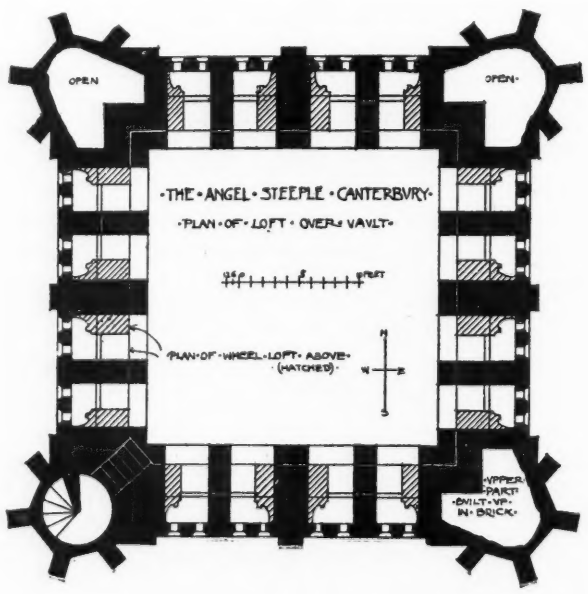
Lanfranc built from necessity, as the church to which he was appointed was ruinous. But twenty years after his church was completed came another great alteration and extension arising purely out of that enthusiastic passion, at once religious and architectural, which again and again in the history of Mediæval architecture led to the sweeping away of building that was in perfectly good condition, in order to replace it by something nobler, more ambitious, and more in accordance with the advanced architectural ideas of a new generation. The work done under Lanfranc's successor, Anselm, is probably that shown in black on the plan. Looking at the plan of the crossing piers, on the east side, it will be seen that Anselm, or those who worked under his suggestion, commenced by slightly widening the choir. They built a new eastern transept, and beyond it the two towers or chapels inclining inwards towards these towers, being really tangents to the large apse which completed the building eastward, and on the centre line of which was the Trinity chapel, on the site of the present one of that dedication, but which is not the original structure. This stage of the work is connected with the names of the priors Ernulf and Conrad, but more especially with that of the latter, who is supposed to have been the real designer and master of works of the choir which bore his name, and which, in all its pristine glory, was the scene of the murder of Beckett, or at all events of the savage attack which was the prelude to it. But this "glorious choir," as it was called, was short-lived ; it was destroyed by fire, beyond possibility of restoration, in 1174. Then came in the reign of William of Sens, who rebuilt the choir of loftier proportions than before, as it now stands. He fell from the vault of the eastern cross, in 1181, but was not killed ; he lingered nearly a year at Canterbury, and then returned to France and is heard of no more. His successor, an English William, completed the eastern portion of the church as it now stands. He also altered the eastern transepts—the latest part of his work. And here we are in a position to appreciate the reason for that curious narrowing of the walls of the existing presbytery as we come eastward, which gives such a peculiar character to this portion of the interior. It is the influence of the older building on the later one. It was not desired to disturb or remove the two towers which had flanked the old apse, so the new choir was narrowed to get between them, and also to bring [illegible] built Trinity Chapel on the same site as the original one ; a remarkable instance of the adapting power of the Mediæval builders, in turning a practical difficulty into a new source of the picturesque.

The uncompleted upper story of the corona was added in the XVth century. The Black Prince re-constructed the undercroft of the south-eastern transept ; Prior Henry of Eastry partially re-constructed Anselm's chapel in the XIVth century ; and Henry IV. added the chantry which bears his name on the north side of the Trinity Chapel.

All this time the nave of Lanfranc had remained as it was, the cathedral being in the condition in which several of our cathedrals have remained, of having an early nave and a later and more elaborate choir ; the choir, the most sacred portion of the building, being always the first to be taken in hand in any scheme for improving and heightening the architectural effect of the building. But as Lanfranc had been compelled to build anew purely on account of the ruinous state of the church as he found it, so in turn his own nave was found at the close of the XIVth century to be so dilapidated that rebuilding became a necessity. As far as the exterior is concerned this is probably to be regretted, for the rather weak Gothic of the present nave is not of great architectural interest ; but the lofty interior with its fine vault is far superior to anything that could have been done in Lanfranc's time ; partly of course on account of its very height, for Lanfranc's nave must have been much lower. The latter appears to have been demolished about 1378, but the rebuilding was not commenced for some years later.

The great central tower belongs to the same architectural movement, so to speak, though it was probably not completed till a good while after the completion of the nave. The crossing piers were thickened and strengthened very materially to carry the tower. The central tower now stands as it was left, or nearly so, the ravages of time and weather alone having affected its appearance, by no means for the worse as far as picturesque effect is concerned. The "Angel Tower," as it is sometimes called (probably from the fact that there was actually an angel finial on the original Norman tower), is remarkably bold in detail for the time at which it was erected, and specially remarkable for the fine and effective treatment of the angles, with the series of strongly-marked vertical lines formed by the radiating buttresses or rather (if one may use the word of a Gothic building) pilasters, for that word more correctly represents their function, which is purely architectural and not constructive. The plan of this angle is unusual ; it forms a portion of a hexagon, the buttresses radiating from the centre. The buttress next the face of the tower joins the wall-plane at an acute angle, giving a sharply-defined shadow, as shown on the southern face of the tower in the drawing.

In the rebuilding of the tower, the several stages of which can be distinctly traced, the existing Norman tower as revised by Anselm was sustained and incorporated, and the clever feat was performed of taking out the Norman sustaining arches and building new ones some 20 ft. higher up. Chicheley (1390–1411) was responsible for the work of strengthening the Norman substructure, and probably altered the arches as aforesaid. In 1408 Archbishop Arundel presented five bells to the angel campanile, which gift may have suggested its glorification. This gift was known as the "Arundel Ring." In 1433 the first stone of the new works was placed, but the tower was not actually completed till 1501, when Warham was Archbishop, and Goldston II. Prior. The tower has recently been repaired at considerable cost, a work of no small difficulty. In many places, owing



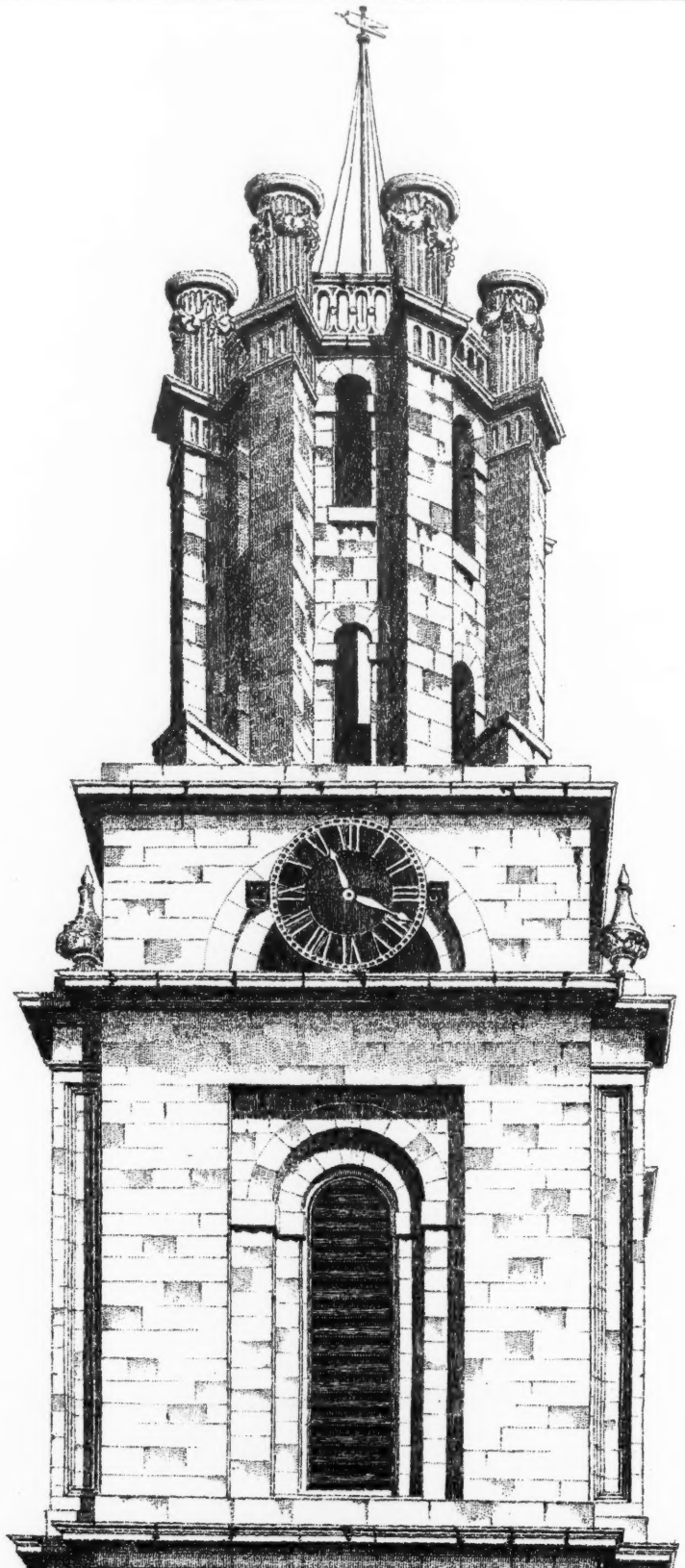
* Willis attempted to reconstruct the church by inference from the work of Eadmer, and inclined to a double apsidal building with an attached baptistry, founded on St. Peter's at Rome.

CATHEDRALS OF ENGLAND. II.—CANTERBURY: VIE

FROM A DRAWING BY MR. H. H. STATHAM

ANTERBURY: VIEW FROM SOUTH-WEST

IR. H. H. STATHAM, F.R.I.B.A.



LATE RENAISSANCE CHURCHES OF LONDON: II.—ST. GEORGE-IN-THE-EAST.

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The south-west or Tower of S. Dunstan was recased in its lower part early in the XVth century, but was also completed by Goldston II. He incorporated in it Lanfranc's Norman work which, as already mentioned, still remains. Lanfranc's north-west tower, with a late XIIth-century story added, existed till 1832, when it was wholly pulled down and the present tower erected in its place; this is a weak copy of the Tower of S. Dunstan, which was restored at the same time.

The restorers (or rebuilders) of the western towers seem to have had the fancy, so common in Italy as to be almost a characteristic of Italian towers, of leaving all the putlog holes unfilled; a circumstance which adds a certain amount of character to them.

Looking at the view once more, we see these restored towers nearest to us, and the nave with two or three of the buttresses refaced, making a strong contrast with the rugged state of those that have not been so treated. Beyond is the western transept on the foundation lines of Lanfranc's transept, but transformed into a piece of Late Gothic, and beyond that the plain unadorned mass of the eastern transept of the time of Anselm (probably) with its curious and rather foreign-looking tower or campanile.

The sketch given in the text is a view of a part of the exterior, showing some of the work of William of Sens; it will be observed what a very French appearance there is about the two nearer buttresses in the sketch.

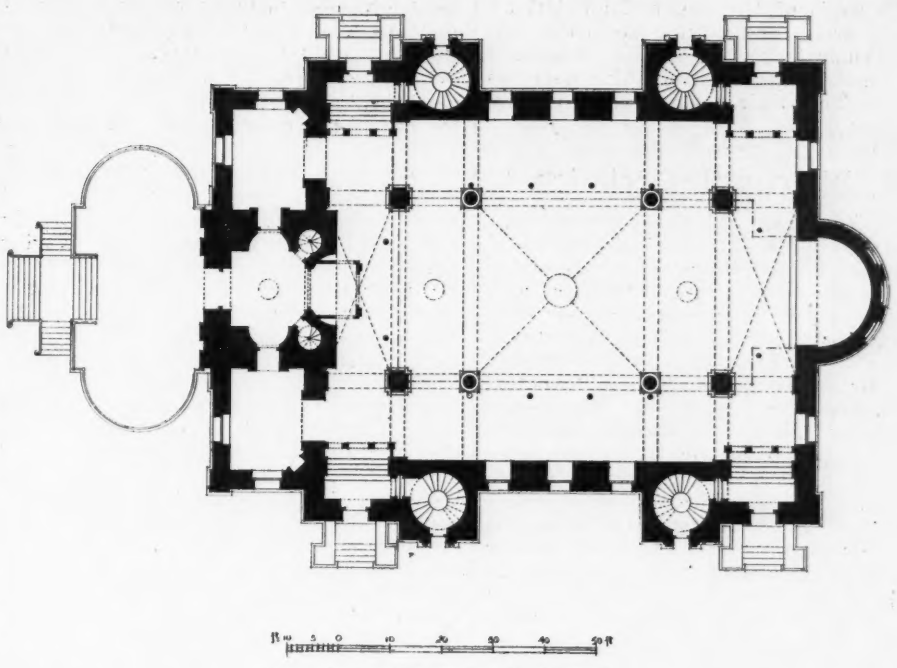
A point of great interest in connexion with the Cathedral consists in our knowledge, through the writing of the Monk Gervase, not only of the general dates of the erection of the choir, but the exact date when every feature was set up. The transformation of Anselm's choir by the succeeding builders can be traced in the building with great clearness stone by stone, and the indications are wholly confirmed by documentary evidence.

In the matter of its monastic buildings (many of them most unfortunately removed or tampered with during the last century, but of which large parts still remain) the group of buildings has a peculiar interest. The same is the case with the series of tombs for which the Cathedral is famous. Not the least interesting of these is that of Archbishop Bourchier, who was allowed to be buried on the north side of the altar conditionally upon the cenotaph not obscuring the light from a certain window shining upon the altar. The tomb was, therefore, constructed with what may fitly be called a clearstory; and it is a great pity that, when the XIXth-century craze of lifting the altar as high as possible reached Canterbury, the altar was moved from its original position at the head of the first flight of steps adjoining which stands Bourchier's tomb.

The Episcopal chair, an early stone construction of great interest but uncertain date, occupied for centuries the position which the altar has now usurped. No greater improvement could be effected than the restoration of the ancient arrangement for which the building was planned. Our plan shows the position of the curious squints by which the Prior from his chamber was able to observe the offices.

The crypts of the cathedral are upon a magnificent scale, being above ground, and that of William the Englishman being unrivalled in its majestic proportions.

The shrine of Thomas á Becket, visited and described by Erasmus, was a structure of great magnificence, which occupied the greater part of the floor of the Trinity Chapel.



Plan of St. George-in-the-East.

The tomb of Archbishop Stratford is of special interest as belonging to the period of the Black Death (1349). A great portion of the elaborate canopy work, formerly lost, was recently discovered in fragments in one of the Cathedral lofts and, at the expense of the present Archbishop, pieced together and replaced, a work of great difficulty and intricacy, but accomplished by patient toil. The missing fragments of the gilded alabaster cenotaph of Henry IV. and this screen have also lately been collected and set in place. This tomb stands in the Trinity Chapel in contraposition to the celebrated one of Edward the Black Prince who, as husband of the Maid of Kent, was a great benefactor to the Cathedral.

Prior Goldston's method of strengthening the great piers of the central tower by cross arches with reticulated tracery surmounting them should not be overlooked in any examination of the Cathedral; and the stone parclose of Prior de Eastry and the XVth-century rood screen, which incorporated and partially supplanted it, are deserving of special mention.

For some of the additional matter in this reprint of the original article, and for the plan of the tower, we are indebted to Mr. W. D. Caröe, under whose direction the recent important repairs to the centre tower have been carried out.

LATE RENAISSANCE CHURCHES OF LONDON.

II.—ST. GEORGE-IN-THE-EAST.

THIS church was built as one of the "Queen Anne's Fifty Churches," in a wide space lying between Ratcliff-highway (now St. George-street) and Back-lane (now Cable-street) for a parish, at first known as Wapping-Stepney, taken out of St. Dunstan's, Stepney, and since reduced by about 90 acres for the building of the London Docks, opened in 1805. The church, having 1,200 sittings on the floor and in the three galleries, was consecrated on July 17, 1729, by Bishop Gibson. The fabric, of Portland stone, cost 18,557*l.*, an excess of 4,987*l.* over the estimate. Of Hawksmoor's designs there is a set of fifteen architectural drawings in the British Museum; it is said that James Gibbs, though more probably John James, assisted him as the architect. The lofty tower forms a well-known landmark for shipping. The plan has two shallow transepts, east and west, with large baptistery and vestry at the west end. The nave is marked off from the aisles by Doric columns and piers, the four columns forming a central square space. The interior presents an old-world aspect with its big carved pulpit, pews, wardens' seats, velvet cushions, etc. The choir stalls were fitted in 1871; the organ, in the west gallery, was by R. Bridge, 1728. In 1880 Mr. Withers acted as architect for the decoration of the apse, the scheme including five mosaic panels of scenes in the life of Christ by Mr. Bell and Salviati; some decorative work was afterwards carried out under Mr. Keith Young's superintendence. The parish churchyard and the adjoining Wesleyan burial ground, about two acres in all, were laid out as an open space—one of the prettiest after its kind in London—by the Vestry, the late Metropolitan Board of Works, 1875, and the Metropolitan Public Gardens Association, 1885, at a joint cost of 4,175*l.* In August, 1902, the Consistory Court issued a faculty to commit the maintenance, at a cost of about 200*l.* per annum, to Stepney Borough Council. Henry Raine, brewer, who in 1719–36 endowed the local schools and girls' asylum, ordained that in this church should be celebrated the weddings of those whom we might call the *Rosières* of Wapping. His monument is in the churchyard; and therein was buried, 1759, Joseph Ames, ship-chandler and ironmonger, author of "Typographical Antiquities" and co-editor with Stephen Wren of "Parentalia."

The west front, which forms the subject of the drawing, shows how strongly Hawksmoor had come under the influence of Vanbrugh. The tower is oblong on plan; on the north and south sides are large buttresses, surmounted by the stock urns of the style. Crowning the whole is an octangular turret with square projections at the angles, finished by circular adornments for which it would be hard to find a name; they are more reminiscent of sacrificial altars than of any known architectural embellishment. The recessed unmoulded windows give an air of mass and solemnity. A certain verticality is ensured by the narrow panels of the buttresses, which counteract well the horizontal lines of the cornices which mark the various stages of the tower. As will be seen from the plan, four small towers, surmounted by domed turrets, contain the gallery stairs. It may be noted that the original arrangement of the steps of the main entrance was altered in the early part of the last century, when the present attenuated and miserable iron railing was added.

Inelegancy and eccentricity of detail, as exemplified by the wayward treatment of the cyma of the main cornice, are fully compensated for by a virile originality. Such defects are a manifestation

of the spirit of the age, and are but an architectural parallel of the coarseness which characterises the novels of Fielding and Smollett, a coarseness which does not detract from their inherent and abiding merit.

Architectural Societies.

LIVERPOOL ARCHITECTURAL SOCIETY.

At the last meeting of the Liverpool Architectural Society, held on February 1, Mr. Mervyn Macartney, Surveyor to the Dean and Chapter of St. Paul's, lectured on "The Three Churches of St. Paul," the chair being taken by Professor Reilly in the absence of the President, Mr. T. E. Evans. The general summary of his lecture was as follows:—The first or Saxon cathedral originally standing on the site was destroyed by fire in 1085. The second or Norman cathedral was founded in 1087. In 1240 the choir was rebuilt or enlarged by being extended over the site of the church of St. Faith's, which stood at its south-eastern corner and a place of worship was granted to the dispossessed parishioners of St. Faith in the crypt under the enlarged cathedral choir. This fact, coupled with the fact that the little church of St. Gregory stood on the south-western corner of the cathedral, under the shadow of the south transept, has often led to the remark that St. Paul's was indeed the mother church of London, inasmuch as she had one church (St. Faith's) in her inside, and another (St. Gregory) in her arms. Old St. Paul's represented a variety of styles, from Early Norman to Decorated. It consisted of a nave 290 ft. long, of twelve Norman bays, and north and south transepts of five bays each. The cloisters, which were south, stood in the angle formed by nave and south transept, and the chapter house was situated in the cloister garth. The fine Early English tower had a timber spire covered with lead, was built about 1315 and destroyed by fire about end of XVth century, when it was rebuilt without a spire, and the curious and remarkably bold flying buttresses from same on to the outer walls of nave and transept, etc., were then probably added. The choir extended to twelve bays, and at the eastern end was a large rose window of superb tracery. The nave was much used as a fashionable lounge, and even as a business exchange until the latter part of XVIth and the beginning of XVIIth century. It became know as "Paul's Walk," from the fact that at about the centre of the nave there were doors immediately opposite each other on the outer north and south walls, these forming a ready means of communication for foot passengers without having to trouble to walk round the eastern or western ends of the cathedral; and so this public passage came to be looked upon in time as a regular "right of way." King James I. was present on Sunday, March 26, 1620, at divine service, when the Bishop of London preached a sermon from Paul's Cross, which stood on the north-eastern corner of the choir. At the subsequent banquet it was agreed to issue a commission to raise money for carrying the repairs to the cathedral into execution. Inigo Jones was afterwards employed to erect a portico at the west end of the cathedral. A view of this portico, taken from old drawings of the period, was projected on the screen, and proved to be of somewhat curious design in Corinthian classic. Strangely enough this portico was added, not for any religious purpose so much, but more in order to relieve the congested state of the business operations carried on at that time in the nave, which resembled a market. Sir Christopher Wren was then called in. He proposed to take down the Gothic arches of the old cathedral and substitute circular ones in Classic style, and to erect a Classic dome in place of the Gothic tower. Fortunately, however, the Great Fire of London occurred in 1666 before his intentions could be given effect to, and that fire destroyed the chief part of the building and irreparably damaged the remainder. The vast magnitude of the work and the contemplation of the great expense requisite for building a new cathedral caused a lapse of some years before it was formally determined that all attempts at "patching up" were hopeless. A commission was eventually appointed in November, 1673, having authority to superintend preparation of plans for rebuilding the cathedral, and, a preliminary design having been approved by the King, his Majesty issued a warrant on May 1, 1675, for the commencement of the works. The demolition of the old buildings took nearly three years to complete, and was not accomplished without much difficulty and danger, but, with the aid of gunpowder and battering rams, the last stone was laid low and the foundations of the new fabric commenced. These probably began at the east end and were carried westward owing to the fact that at the west end of the site Wren had erected a temporary chapel before commencing his new foundations. The original design prepared by Wren, and known as his favourite design, was a magnificent conception, by some still thought to be much superior to the building now erected, but it was rejected by the King on account of its "unecclesiastical arrangements." The model of this design is preserved in the cathedral library. Wren subsequently prepared a revised design agreeable to the King's ideas and wishes. They, however, showed a sad falling off much to Wren's own disappointment. However, the opportunity having arisen to make some slight revisions in this design, Wren was strong man enough to prepare an entirely new design throughout, which is the present structure. In planning the new cathedral Wren changed the axis from that of the old cathedral in order partly to get rid of the difficulty which would have been caused by building on the site of the old walls, whose foundations were known to be defective, and so to break perfectly fresh ground for his new foundations. Wren also prepared a magnificent scheme for improving the approaches to and surroundings of the cathedral, but it was not accepted, and the building was eventually enclosed by cast-iron railings on a stone base. These railings were subsequently removed on the western side. Sir Christopher, though sadly hampered at the last through the jealousy and perverseness of his committee, fortunately survived to see the completion of his great masterpiece.

On the termination of the lecture a vote of thanks was passed to Mr. Macartney, on the proposition of Mr. Edmund Kirby, F.R.I.B.A., seconded by Mr. Blackburn, and the proceedings closed.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Clapham.†—A house on the northern side of Poynders-road, Clapham, to abut also upon the western side of Rodenhurst-road (Mr. A. E. Peacock).—Consent.

Dulwich.†—Buildings abutting upon Azenby-road, Camberwell (Messrs. Deakin & Cameron for Mr. G. H. Stelling).—Consent.

Hammersmith.†—A porch at No. 1, Dalgarno-gardens, North Kensington (Mr. A. Dawkins for Mr. P. Tinckham).—Consent.

Hampstead.—An addition to a studio at No. 24, Greville-road, Hampstead (Mr. R. W. Schultz).—Consent.

Hampstead.—An iron and glass shelter in front of "White Friars," Chislett-road, Hampstead (Mr. J. D. Hunter for Mr. N. M. Shimberg).—Consent.

Islington, West.—Buildings upon the site of Nos. 236 and 238, Pentonville-road, Islington (Mr. H. C. Braun).—Consent.

Paddington, North.—Buildings on the south-western and north-eastern sides of Biddulph-road and Ashworth-road, Paddington (Mr. C. W. Stephens for the General Motor Cab Company, Ltd.).—Refused.

Width of Way.

Deptford.—A mission building on the northern side of Besson-street, Deptford, at less than the prescribed distance from the centre of the roadway of Besson-mews (Mr. J. H. Waterworth for the Trustees of the Hatcham Mission).—Consent.

Lines of Frontage and Construction.

Wandsworth.†—The retention of a wood and glass showcase in front of No. 318, Balham High-road, Wandsworth (Mr. C. Crisp).—Consent.

Wandsworth.—That the Council, on the application of Mr. C. Braun, do extend the licence in respect of the temporary wooden hoarding on the western side of Woodwell-road.—Consent.

Width of Way and Construction.

Greenwich.—The retention of a wood and iron shed of a temporary character at Anchor and Hope Wharf, River Bank, Charlton (Castle's Shipbreaking Company, Ltd.).—Consent.

Width of Way and Line of Frontage.

Westminster.—The erection of a wood, iron, and tile covering for ladders in front of the premises of the Army and Navy Auxiliary Co-operative Society, Ltd., Regency-street, Westminster (Mr. F. J. Barrett for the Army and Navy Auxiliary Co-operative Society, Ltd.).—Consent.

Space at Rear.

Chelsea.—A deviation from the plans approved for the erection of Sloane-gate-mansions, on the eastern side of D'Oyley-street, Chelsea, so far as relates to the erection of an addition at the fourth floor level (Mr. W. Hunt).—Consent.

Conversion of Building.

Haggerston.—The conversion of the police-station, Kingsland-road, Haggerston, into business premises (Messrs. Lovegrove & Papworth).—Consent.

Alteration of Buildings.

Chelsea.—The retention of wooden joists bearing on a division wall at the motor garage of the Coupé Carriage Company, Graham-street, Chelsea (Mr. W. W. Gibbings).—Consent.

Uniting of Buildings.

Chelsea.—Armoured doors to an opening at the motor garage of the Coupé Carriage Company, Graham-street, Chelsea (Mr. W. W. Gibbings).—Consent.

City of London.—The uniting of Nos. 11, 11A, and 11B, Upper Thames-street, City (Messrs. Holland & Hannen for Messrs. H. Lindenmeyer & Sons).—Consent.

Marylebone, East.—The uniting of Nos. 22 and 23, Bentinck-street, St. Marylebone (Mr. W. H. White).—Consent.

Paddington, South.—The uniting of Nos. 6 and 8, Lancaster-street, Lancaster-gate, Paddington (Messrs. Colwell & Edgar).—Consent.

Chelsea.—The formation of an opening at the motor garage of the Coupé Carriage Company, Graham-street, Chelsea (Mr. W. W. Gibbings).—Refused.

The recommendations marked † are contrary to the views of the local authorities concerned.

Competition News.

PALMER'S GREEN CONGREGATIONAL CHURCH.

The designs submitted by Messrs. George Baines & Son (London) in a recent competition for this church have been adopted, and the erection of the buildings is to be proceeded with.

NEW BRANCH LIBRARY FOR DEPTFORD.

The Libraries Committee of Deptford Borough Council have received from Mr. Ernest George, the President of the Royal Institute of British Architects, the names of certain gentlemen, any of whom, Mr. George states, can be depended upon to use good judgment as an assessor in the matter of the New Cross Gate branch library. The Committee have chosen from these names Mr. James S. Gibson, 5, Old Bond-street, W., to act.

Y.M.C.A. BUILDINGS, PONTMORLAIS WEST.

The plans of Messrs. Ivor Jones & Percy Thomas, of 18, St. Mary-street, Cardiff, have been accepted for the new building proposed to be erected for the Merthyr branch of the Y.M.C.A. at Pontmorlais West. The probable cost of the building is estimated roughly at 7,300*l.* There were sixty-three sets of plans sent in, and Mr. Gerald C. Horsley, of London, was appointed assessor by the President of the Royal Institute of British Architects.

BLACKPOOL CARNEGIE LIBRARY.

Mr. G. H. Willoughby, the assessor in the competition, has now made his awards. The first place has been assigned to Messrs. Alex. Cullen, Lochhead, & Brown, Brandon-chambers, Hamilton, near Glasgow. For names of other placed competitors, and for some remarks on the designs sent in, see our article on page 175.

BOOKS RECEIVED.

WORKMEN'S COMPENSATION CASES. Vol. I. Reports of cases under the Workmen's Compensation Acts. (Butterworth & Co.)

GUIDE TO SANITARY INSPECTIONS. Fourth Edition. By W. Paul Gerhard, C.E. (Chapman & Hall.)

LABOUR AND HOUSING AT PORT SUNLIGHT. By W. L. George. (Alston Rivers.)

Correspondence.

THE INDIAN MUSEUM.

SIR,—All who are interested in the contents of the Indian Museum will read with pleasure your "Note" as to the presentation of memorials protesting against the breaking-up of the collection.

It is most earnestly to be hoped that your previous "Note," drawing attention to the great collective value of the Oriental collections at South Kensington, may have drawn general attention, and that even wider protest may be evoked.

In the past popular ignorance has caused Oriental art to be much underrated, and it is most fortunate that, in spite of lack of general interest, the Museum authorities have succeeded in bringing together so fine a collection. Of course, the wide range and representative character of the Indian Section makes other sections appear relatively weak, but taken as a whole there is no other equally adequate presentment of Eastern arts in this country, if anywhere.

The educational advantages of arranging illustrations of the various arts of a given time and place in juxtaposition have led to the exhibition in many continental museums of complete rooms constructed and furnished in one style, and such a scheme largely assists the student who would acquire an understanding of the ideas and surroundings of the people of other times and countries.

If the question were merely one of the handling of tools—of methods of workmanship in the narrowest sense—perhaps the placing together of, say, pieces of carved wood from all quarters of the globe might teach something. But surely this is an insignificant part of the uses of these collections, and if it be desired to help the student in understanding the application of general laws under varying circumstances and to varying materials, to aid him in following those peculiarities which tell of changing religions or climates, or to enable him to see which features of the exhibits are due to the individual worker, and which to those surrounding circumstances that were beyond his control; if, in fact, the widest possible advantage is to be got from the contents of these galleries, surely the desirable method must be one that will enable us to obtain as complete a view as possible of each country's arts, without having the eye distracted by the simultaneous presentment of forms and methods of work which must, in many cases, be so divergent as to produce, in their aggregation, merely discord.

MATT. GARBUTT, F.R.I.B.A.

"WET" AND "DAMP" BRICKS.

SIR,—The questions raised by Dr. James Braithwaite under this heading in last week's issue of the *Builder* are of so much importance to the health of individuals and communities that I venture to direct further attention thereto.

Whatever may be the difference in durability between bricks made from "wet" and those from "damp" clay, it is well known that, under certain atmospheric conditions, condensation of moisture within buildings takes place when outer walls are constructed of heavy, impervious bricks, stone, or other dense materials, and that dampness so caused is frequently attributed to the penetration of wet through the walls.

Where moisture is condensed, and there is lack of ventilation, moulds may germinate; some of the spores of which possibly come from the body of the wall, but by far the majority are deposited with moisture from the air, for they could scarcely retain vitality in a brick after it had gone through the process of burning.

It cannot be too frequently impressed on all who build as well as on householders, and particularly on medical men, that dwellings most healthy to live in are those in which pervious materials are employed with discretion. Ventilation is best secured by the income of air through pervious outer walls, because it is then continuous; and experience proves that when such walls have become thoroughly dry they resist penetration of moisture; they should not, however, be exposed to continuous driving rains, because, once saturated, wet is drawn in by capilliary attraction, but an ordinary fall of rain merely wets the outer surface, which again dries when rain ceases. Moreover, heat is retained by pervious materials, condensation thereon does not readily take place, and comfort is secured because heat is not extracted from the body, as happens when in proximity to walling of denser materials.

The repetition of these recognised facts is necessary so long as mere hardness or strength is regarded as the only essential in building materials employed in our dwellings.

WILLIAM HENMAN, F.R.I.B.A.

CORNWALL COUNTY COUNCIL OFFICES COMPETITION.

SIR,—My attention has been drawn to a letter published in your issue of last Friday week, January 30. As the letter is anonymous, I should have treated it with the silence that such communications deserve had it not been for an editorial note at the end of the letter. With the opinion expressed in this note, in the abstract, I entirely agree, but I must add that it is extremely unjust to myself that an anonymous letter of the kind, in which my name is quoted, should not only have been published in the *Builder*, but should have received the imprimatur of the Editor without any reference to myself, or trouble being taken to ascertain the actual facts of the case. If such "interested" anonymous letter-writers would show a little more interest in the first rudiments of professional etiquette, instead of forming false conclusions and rushing into print, much unpleasantness would be avoided.

However, to prevent the possibility of any further misunderstanding, it may be desirable to state a few plain facts.

The Committee drew up the conditions of competition without the advice of an assessor. My first connexion with the matter was when I received a letter in January asking me to act as adviser to the Committee on nine sets of plans, in accordance with clause 4 of the conditions, which runs as follows:—

"It is the intention of the Council to call in the assistance of a Fellow of the Royal Institute of British Architects to aid the Committee in deciding on the merits and suitability of the designs submitted, due regard being paid to the question of cost, and the probability of the work being carried out for the amount stated by the competitors."

Later, I heard incidentally that other than the nine sets of plans before referred to had been submitted. I at once wrote strongly urging that I should be allowed to see all the plans. It must be noted here my position was, at the time, clearly defined as "adviser" "to aid the Committee," etc., in its decision, and not as an assessor, whose decision should be final. Although the Committee, in the first instance, unquestionably thought it had the right to select such plans as were deemed suitable, the secretary at once acceded to my request as to seeing all the plans, the result being that I was not only able to make a careful inspection of the whole of the fifty-nine sets submitted, and advise as to same, but that both the Committee and Council, previously to my award being opened, unanimously agreed to accept my decision as final.

Unsatisfactory as the conditions were in some respects, the competitors accepted them, and therefore now have no reasonable cause for complaint. In conclusion, I can only assure all interested that from first to last I found the Committee most willing and anxious to act with perfect good faith and impartiality, and in the end the result was absolutely just and fair. GEO. H. FELLOWES PRYNNE.

*** We regret that we should have done Mr. Prynne an injustice in supposing that he had consented to adjudicate on only a selection of the designs; but the statement was made in the local papers as fact.—ED.

SALVATION ARMY HALL, BEDMINSTER.—The memorial-stones have been laid of the new hall at Bedminster, which the Salvation Army is erecting near the junction of Dean-lane and North-street. The buildings consist of a large hall, with gallery, capable of accommodating 550 people, and a smaller hall at the rear for 225 people, as well as officers' rooms. The structure is of red bricks, with Bath stone dressings. It is designed by Mr. Oswald Archer, and is being built by Mr. Thomas C. Gluyas.

CRÈCHES IN FRANCE.

IN view of the recommendation of the Board of Education that special provision should be made in crèches for children under five years of age, it is of interest to quote from a Board of Education Report the nature of the building and equipment of the crèches in France. Though each crèche differs in size and accommodation, yet all the more modern buildings contain in greater or less degree the same number and arrangement of premises. A great many of them are merely private houses adapted for the purpose, and some, though recognised centres of hygiene, are sadly wanting in the most elementary principles of sanitation. The new buildings all contain a hall leading directly to a waiting-room, where the mothers can feed their babies or wait. Leading directly from the hall is also the large bedroom for very young babies, known as the Salle des Berceuses. This is fitted with raised iron cradles arranged in rows. The floors are bare, the walls can be washed, the windows are large. A ministerial order of 1897 fixed 9 metres per child as the minimum cube of air for the children's sleeping-rooms. In the Crèche Fénélon-Charles, the salle des lits, containing thirty-six beds, measures 10 metres 60 centimetres by 7 metres 15 centimetres. The salle des lits is the bedroom for larger children. In some crèches there are a number of smaller wards for the elder children, who can be watched through glass doors without fear of disturbing them. A large playroom comes next in size and importance. A circle of wooden railings is fixed to the floor, usually in the centre of the playroom, and within them runs another set. Between these two the children can walk and run without danger of falling. Inside are low benches, chairs, and little tables, where the little children can sit and play with their toys. Every modern crèche has its kitchen fitted with a gas-stove and oven. A lavatory is fitted with small raised baths and low basins. The water for these is usually warmed by means of a geyser. Many of the bathrooms are tiled, as are also the adjoining "cabinets." There is a linen-room, fitted with cupboards and shelves; a small office for the directrice; a small office for the doctors, with weighing machine, etc.; a sterilising-room, where also the babies' bottles are kept. All these rooms are on the ground floor. Below usually is the laundry; above are the directrice's rooms and an isolation-room in cases of infection. No flowers are allowed inside a crèche, but a garden outside is an acknowledged necessity for a modern crèche. The playgrounds are mostly gravelled and planted with chestnuts, with heaps of sand for the child to dig, and also sun shelters. The Crèche Fourçade (model), lately rebuilt and equipped, cost 194,839 francs, exclusive of site. The average cost of five crèches was approximately 80*l.* for each place, exclusive of the work or site. There are, excluding those in Paris, 322 crèches in France.

THE TRIBUNAL OF APPEAL:

LINE OF BUILDINGS IN EUSTON-ROAD.

ON Thursday of last week the Tribunal of Appeal under the London Building Acts, 1894 to 1905, sat at the Surveyors' Institution, Great George-street, Westminster, to hear appeals by the Metropolitan Railway Company and the Midland Railway Company against the certificate of the Superintending Architect of Metropolitan Buildings of December 19, 1908, defining the general line of buildings on the north side of Euston-road, between Ossulton-street and Churchway. Mr. A. Macmorran, K.C., Mr. R. Cunningham Glen, and Mr. A. Bethune appeared for the Metropolitan Railway; Mr. Courthope Munroe for the Midland Railway; the London County Council being represented by Mr. Horace Avory, K.C., and Mr. F. F. Daldy.

Before the case was opened, Mr. A. A. Hudson said he wished to refer to the great loss which the Tribunal had sustained in the death of the late Mr. Gruning. He was a man who had had a most distinguished career, and one to whom they all looked up as a man of very great strength of character. They had already expressed to his son and the members of his family the great regret they felt at his death, and they desired to do so publicly as well. Mr. Macmorran, K.C., and the other counsel engaged in the case associated themselves with the remarks of Mr. Hudson.

Mr. Macmorran, K.C., then opened the case for the Metropolitan Railway Company. He said that the appeals related to the general line of buildings which had been prescribed or fixed by the Superintending Architect of the London County Council with reference to a portion of the Euston-road. The circumstances in which the appeal arose were these:—The Metropolitan Railway Company were owners

of Nos. 110, 112, 114, and 116, Euston-road. The properties were acquired by the company under an Act of Parliament for the general purposes of the railway. Upon what was a forecourt in front of 110 the company erected a small building as an accumulator-station in connexion with the electrification of the railway. The London County Council thereupon took objection that the building was an infringement of the general line of buildings. The Superintending Architect being appealed to, fixed the building line, and in his certificate he had placed it as they contended in the rear of a great number of existing buildings in this part of the Euston-road. He submitted that the Superintending Architect was altogether mistaken, not only in the line which he had prescribed, but with regard to his own functions. His function was that of an architect—he had nothing to do with the question of title; he had no right to inquire whether the buildings were rightly or wrongly there. He had only to look at the property and say what was the building line. In this case he had purported to take into account the question as to whether some of the buildings in the road had been erected by consent, and whether some had been erected without consent, and therefore might be said to be unlawfully there. The London County Council had contended, and did contend, that where their predecessors had granted their consent to the erection of a building beyond the general line, that building must for some reason or another be disregarded in dealing with the general line. He (Mr. Macmorran) did not follow that. His submission was that every building which was erected must necessarily affect the building line, and if it had been intended that the consent should not affect the building line, they would have found a provision similar to that contained in the London Building Act of 1894, sect. 27, which said that the consent by the Council to the erection of any building beyond the general line of building, or the erection of such buildings, shall not be deemed to affect or alter the general line of building in any other part of the street at the time of consent. The buildings in question were either lawfully there or not; but that was not a matter for the Superintending Architect. If they were not rightly there, presumably there were means by which they could be moved, and when they were moved it might be that the general line of buildings would be altered. In conclusion learned counsel said that the case had become very much easier by reason of the judgment given in the Divisional Court last October, in a case between the London County Council and the Metropolitan Railway, when the decision of the Tribunal relating to buildings in the same road had been upheld.

Mr. Courthope Munroe, for the Midland Railway, said that in view of the fact that an exactly similar point had been heard at considerable length by the Tribunal, and that the Divisional Court had decided against the contention of the London County Council, he was rather surprised at the present proceedings. The real point the Tribunal had to consider was not where they would like the building line to be as a matter of public convenience, but what the line actually was. Mr. Justice Walton dealt very clearly with that point in his judgment last October, saying that the Superintending Architect and the Tribunal had to look at the buildings as they existed. It was a little hard upon his clients in face of that judgment, that within exactly a month and a day after the Superintending Architect, having been told that he was an architect and not a lawyer, put his foot through the whole decision and started again on the opposite block, as if the Divisional Court had not said a word in the matter. The real object of the London County Council was to try to get possession of building land without paying for it as such, but simply as land sterilised. That might be a very laudable object from a public point of view, but it appealed very differently to owners, who did not see why they should be dispossessed of their property in that way.

Mr. Matthew Garbutt, A.R.I.B.A., in reply to Mr. Bethune, said the building line as defined by the Superintending Architect was 50 ft. behind many of the existing buildings. Speaking as an architect he should say that the fronts of the existing shops in Euston-road constituted the general line of buildings.

Mr. Horace Avory, K.C., for the London County Council, contended that the only point that had been decided by the Divisional Court was that the Tribunal might take into consideration as a matter of fact one-story buildings, or erections which were there, and which were proved to have been erected with the consent of the Metropolitan Board of Works or the London County Council prior to 1894.

Mr. Hudson: Do you say that it is decided that we can take into account a building in respect of which no consent has ever been given, or where it has been proved that consent has been refused, so that it may be said to be an unlawful building?

Mr. Avory said his contention was that the Divisional Court had not decided whether the Tribunal might or might not take into account buildings which had been erected without consent, or as to which they had no evidence. In view of future litigation which probably would arise under the point, he wished to be very clearly understood as to what his contention was. The decision was under appeal, but he would assume that, pending the appeal, the Tribunal would consider themselves bound by the decision of the Divisional Court. Assuming that, he would have to admit in this case that when they came to view and make up their minds about the building line, they would take into consideration any of the one-story shops or additions which had been erected with consent prior to 1894. He submitted, however, as a matter of law, that they ought not to take into consideration any of those erections which were proved to have been erected without consent—in other words, where it had been proved that consent had been refused, and, further, having regard to the early history and legislation with respect to this road, they ought not to take into account any similar erections as to which there was no evidence before them one way or the other. Broadly, he contended that an erection or an addition to a building which was unlawful could never affect the building line, and ought never to be taken into consideration. If they were once satisfied that a building was unlawfully in a street, or unlawfully brought forward, they must, he submitted, exclude such a building from consideration when the general building line was being determined. Under an old Act he contended that anything in this road within 50 ft. of the centre of the highway was *primâ facie* unlawful. A further point he took was that these one-story shops were not in fact buildings which ought to influence the building line in the street—they were more properly called additions or projections from the existing buildings.

Mr. E. T. Mitchell, from the Superintending Architect's Department of the London County Council, proved the action of the Metropolitan Board of Works and the London County Council in respect to the various erections in the Euston-road on the forecourts. The evidence of this witness went to show that, while in some cases the consents could be traced, in others there were no records.

Mr. Avory having replied for the London County Council,

Mr. Macmorran urged that the most that could be said was that the local authorities had not been able to find any records of several of the consents, but he did not think from that that they were justified in saying that therefore no consents had been given.

Mr. Courthope Munroe said that with regard to Mr. Avory's contention that anything 50 ft. beyond the centre of the road was *primâ facie* unlawful, he (the speaker) would suggest that the presumption was exactly the opposite unless it could be proved that the buildings were erected without consent.

The Tribunal reserved their decision.

THE SANITARY INSPECTORS' ASSOCIATION:

ANNUAL DINNER.

THE twenty-sixth annual dinner of the Sanitary Inspectors' Association was held on Saturday last week in the Georgian Hall, New Gaiety Restaurant, Strand, W.C., Sir James Crichton-Browne, M.D., LL.D., F.R.S., President, in the chair. There were also present Sir Wm. Crookes, F.R.S., Sir A. Keogh, K.C.B., Sir W. Taylor, Sir Shirley Murphy, M.D., Mr. L. Atherley-Jones, M.P., K.C., Mr. H. D. Searles Wood (Chairman of the Royal Sanitary Institute), Major T. J. Moss-Flower, and Messrs. G. Laurence Gomme, L.C.C., E. White Wallis, T. G. Dee, Isaac Young, J. T. Quinton (Chairman of the Central Executive Council), H. Johnson, W. Stansfield, H. H. Spears, G. Anderson, W. M. Higgs, and others.

The loyal toast having been suitably proposed by the Chairman and honoured,

Mr. G. L. Gomme, Clerk to the London County Council, proposed the toast of "The Houses of Parliament." He said that there were many things which we want done, among them being the improvement of our sanitary laws, the improvement of things connected with our sanitary government; that was intimately connected with the homes of our poor, which wanted attending to as much in the country as they did in the towns. And a great number of inequalities had to be removed; and yet things dragged on, and we were left with the residuum of an ancient civilisation—or uncivilisation, he might almost say.

Mr. L. Atherley-Jones, M.P., K.C., in response, said he remembered the day when there was a mass of useful legislation passed by the private members. That was a thing of the past, and the time of Parliament was wasted by showy legislation of rival parties. He looked forward to the time when the House of Commons might resume its work of usefulness; and when that sense of individual responsibility which formally attached to every member, and which now was absent, might be regained. One cause which might thus be helped forward was the cause of sanitation, and he hoped that this cause might take a larger share in their deliberations than under the present system of legislation.

Mr. H. D. Searles Wood, Chairman of the Royal Sanitary Institute, then proposed the toast of "The Imperial Forces," coupled with the name of Sir A. Keogh, K.C.B., of the Army Medical Service, who referred, in response, to the relation which sanitary inspection bore to the branch of the service which he represented. In times of peace that service received little attention from the public, but in times of war it received a great deal of attention. During the last few years they had been endeavouring to reduce as far as they could the incidence of disease, both in peace and in war. Medical and surgical aid in time of war was as nothing to prevention of disease. Sanitation preceded everything in war. That was the theory; in practice, what did the public do to assist them in preventing disease? Really very little, but under the new military system they had now a definite sanitary service in time of war for the first time in our history. But so far they had failed to get the supporting *personnel* of the sanitary services for the Territorial Army, and he appealed to them for support.

Major T. J. Moss-Flower also replied.

Dr. J. Kerr, M.A., M.D. then proposed the toast of the evening, "The Sanitary Inspectors' Association." The Association numbered some 1,500, and its members were the real miners and sappers on whom depended the safety and strength of the whole sanitary service of the country. They were already a great profession, and such a profession of experts and specialists could only be regarded as on the upward grade, for everything tended to specialisation and differentiation. But there was a danger of the profession becoming too perfect. What we wanted was sanitation, not antiseptics, and it had to be brought home to the people at large how great were the benefits of personal care and health, and how great a part they would play in the future.

The President, in response, said the Association was doing good work, as he well knew, and its members throughout the country were rendering a public service which could scarcely be over estimated. The advance of science in all its branches during the last fifty years had been remarkable, almost startling, and in no branch of science had the advance been more decisive or beneficient than in that which was concerned with sanitation and the public health. The death rate, in spite of some adverse circumstances, had in England and Wales fallen from 22·6 per 1,000 living in 1866 to 15·4 in 1906—a fall of 7·2 per 1,000 in forty years, equivalent in 1906 to a saving of some 180,000 lives that would have been squandered had the old rate been maintained. In London the low level at which the death rate had been kept during the years 1905, 1906, 1907 had meant when compared with the previous decennium, a gain of 19,000, 19,000, and 22,000 lives in the three years respectively, and a gain in life-capital of two million years, to say nothing of the enormous economic and pecuniary gain. All this we owe to improved sanitation. Let them think what all this meant in the lightening of that great load of pain and poverty and sorrow and anguish that our poor humanity had to bear, and they would realise that sanitation was the Evangel of modern times, was making amends for the great battles of the world, was engaged in a conflict with an enemy to whom no quarter should be shown—a conflict in which skill and diligence were needed, and in which occasionally deeds of courage and self-sacrifice were done. The discoveries of medical men would remain useless if there were not sanitary inspectors to give them practical application: but sanitary inspectors would often stand baffled and bewildered if there were not medical men to give them guidance and support. Sanitary administration in this country was still in a state of solution; it had not crystalised yet, and the functions appertaining to its different departments were not always sharply defined. As a rule, especially in the great centres of population, medical officers of health and sanitary inspectors had found a convenient *modus vivendi*, and were able to co-operate without friction—in complete harmony, for the commonweal. There was plenty of work for both to do. There was no finality in sanitation, for the work was only begun, and on all hands sanitary problems urgently press for solution.

They had only to observe the disparity that existed in the death rate and the prevalence of certain kinds of sickness in one district when compared with another to realise that there were ample fields for sanitary and social work of the most strenuous kind. At this moment the chances of life were sixteen times better in Hampstead than in Shoreditch, and that was not merely due to the geographical position of Hampstead, but to complex hygienic conditions which in the case of Shoreditch they must seek to amend. They must strive for an equalisation of the death rate in the metropolis by bringing up the worst to the level of the best. There was no ultimate best in sanitation, for it was to be hoped that as improvement goes on the standard would, step by step, be raised, and it was certain that as civilisation advanced and habits of life were changed new sanitary problems would be constantly presenting themselves. The President then referred to the advancement of aeronautics, motor-car development, and dust problems, and the effect of disease scares such as cholera used to cause, which left their mark on the nervous system. He was quite sure that the well-organised machinery we now possess for the prevention of disease was salutary by the sense of safety it inspired, and that the Association was conducive to that state of things.

Mr. W. Muirhead, J.P., then proposed the toast of "Local Government," coupled with the name of Mr. Isaac Young, who, in response, referred to the Housing and Town Planning Bill before Parliament last year. The proposals were a step in the right direction, but sanitary inspectors were aggrieved in having been again ignored. There was a tendency in recent legislation to ignore the statutory position of the sanitary inspector, and to place others in his stead, and from their point of view this was to be deprecated.

The President said there was now a presentation to be made to Mr. Anderson, of Middlesbrough, late Chairman of the Association, as a mark of the esteem and of the affectionate regard in which he was held by every member of the Association. It was a spontaneous expression on their part, and was an indication that Mr. Anderson was a sanitary inspector of the right sort, and that he had rendered signal service to the Association.

The President then presented Mr. Anderson with an illuminated address, a case of cutlery, and a diamond ring.

Mr. Anderson briefly thanked the members, and said he had spent twenty-seven years in municipal work, and for twenty-two of them he had been a sanitary inspector. The sanitary laws of the country had never been so well administered as they were to-day by the inspectors in office. The Association had about 1,500 members holding office, and they had eight centres in England and Wales, every town and hamlet having its centre. Members were encouraged to meet monthly to present papers and discuss problems, and to assist all they could those following in the service. They did not believe that an inspector was worth much who asked for nothing but his salary, for they had a higher motive; and if they had not received that consideration from those above them, they could still think they were entitled to it.

Sir Shirley Murphy, M.D., D.P.H., then proposed the toast of "Science and Art," coupled with the name of Sir. H. von Herkomer, R.A., who, being unable to be present, had sent a written reply.

The toast having been cordially drunk,

Sir Shirley Murphy read the response, as follows:—"I have been asked to say a few words on cleanliness and dirt in their relation to the fine arts. Now, I do not quite know which way to put my text—cleanliness and dirt in their relation to the fine arts is one thing, but if I transpose the words into 'the fine arts in their relation to cleanliness and dirt' I bring it into another category of thought. I will begin by saying that although a lot of fuss has been made about cleanliness, a good deal of value has been added to our old masters by dirt and varnish. I have heard people praise a picture because it was 'so nice and clean.' But to our artistic temperament a nice cleanly-painted picture is as irritating as a newly-built, clean city. It is dirt and dilapidation that produce the picturesque, and picturesqueness is a form of beauty, whilst beauty is the essence of ideality. So there you have dirt as a beneficent element. Further, we pick out a rustic, not when he is in his Sunday-best-go-to-chapel-dress, in which, to our eyes, he is vulgar, but when in his workaday suit, all begrimed by his work. In that he is paintable and picturesque. Send him home first to get washed and put on freshly-washed garments, and he becomes absolutely useless as a model. We pay a surprise visit to a cottage in the country, and find in the kitchen an old chimney-place—a real ingle nook—blackened with a marvellous resinous tone by generations of wood and coal fires. What a background for a figure. We undo our sketching things and feverishly begin to make a study of it. We arrange with the woman to pay another visit the next day in order to finish our studies. Imagine our feelings when we find that chimney corner had been meanwhile whitewashed. Nothing could convince that woman that she had committed an unpardonable piece of vandalism. The fact is, she has been tampered with by a sanitary inspector, and we are thereby robbed of some hundreds of pounds. I tell you, whitewash has been the greatest sinner against the fine arts. Look at an old, untouched cowshed. If you had ever been so fortunate as to see such a cowshed, with the last rays of the setting sun stealing in at the cobwebby window, you would never forget it. The tones of the shed become iridescent, and the part of the cow which is usually turned to the window or to the door becomes aglow with colour. But such treasure troves for the artist are a thing of the past. Whitewash has deprived our art of cowsheds. Look again at an old orchard, with its fruit trees artistically neglected by the farmer, growing in grotesque and picturesque shapes, stems covered with lichen, blight, and other paintable excrescences. Sanitary science has given the Satanic hint to whitewash those stems. No artist has been born who could make a picture of a whitewashed orchard. There is more to be said of the beneficent effect of dirt. . . . I will just quote the testimony of Ruskin. In his 'Modern Painters,' Vol. I., he says:—'This ought to be noted respecting modern painters in general, that they have not a proper sense of the value of dirt; cottage children never appear but in freshly-got-up caps and aprons, and white-handed beggars excite compassion in unexceptionable rags. In reality, almost all the colours of things associated with human life derive some of their expression and value from the tones of impurity, and so enhance the value of the entirely pure tints of Nature herself.' Well, I have said enough to convince you that this Association is on the wrong track, especially as regards the fine arts. But we artists would forgive all your injuries to our art if you would only do one thing for us, and that is clean the atmosphere of London. It would means thousands of pounds in our pockets. You start in the cellars; you should start above the house-tops and work downwards."

The remaining toasts were "Kindred Associations," proposed by Mr. J. T. Quinton, Sir William Taylor responding; "The President," proposed by Dr. Hope; and "The Press," proposed by Mr. H. Johnson, Chairman of the Finance Committee.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ADLINGTON (Lancs).—Church school. Messrs. Murod & Paneroy, architects, Bolton.

Bowburn.—School. Mr. H. Gradon, architect, Market-place, Durham; Messrs. Blackett & Son, builders, Darlington.

Beamish (Durham).—School. Mr. W. Rushworth, Shire Hall, Durham.

Bishop Auckland.—Secondary school (14,000*l.*). Mr. T. Lumsden, builder, Jarrow.

Blaydon-on-Tyne.—Secondary school. Mr. W. Rushworth, Shire Hall, Durham.

Blackpool.—Brick works, for Messrs. R. Fielding & Sons.

Bo'ness (Linlithgow).—Church. Mr. M. Steel, Masonic-buildings, Bo'ness.

Barrowford (Nelson).—Factory and works. Mr. V. Whitehead, architect, Hall-street, Nelson.

Bacup.—Post-office, Burnley-road (10,000*l.*). Mr. J. W. Else, Borough Surveyor, Bacup.

Birkby.—School. Mr. K. Campell, Borough Surveyor, Huddersfield.

Bradford.—Additions, Sanatorium. City Architect, City Hall, Bradford.

Bromley. — Two houses, Avondale-road. Messrs. A. P. Poigndestie & Sons, builders, 11, Gwyder-road, Bromley.

Bolton.—School, Prestolee (6,000*l.*). Mr. H. Littler, Ribblesdale-place, Preston.

Croydon.—Four houses, Pollards-hill, South. Messrs. Chown & Sheffield, architects, Norbury.

Chatham.—Premises, Luton-road. Mr. C. E. Skinner, builder, Railway-street, Chatham.

Chorley.—Baths (5,000*l.*). Mr. W. Leigh, Borough Engineer, Town Hall, Chorley.

Chopwell.—School. Mr. A. Bendle, architect, Grainger-street, Newcastle-on-Tyne; Mr. E. T. George, builder, Newcastle-on-Tyne.

Chilton.—School (2,500*l.*). Mr. C. Johnston, architect, Bishop Auckland; Messrs. Hope Brothers, builders, Coundon.

Darlington. — Rebuilding Holy Trinity Church, Mr. C. H. Fowler, architect, "The College," Durham; High School for Girls, Mr. H. Rushworth, Shire Hall, Durham.

Durham.—School, Chelton-buildings. Mr. C. Green, architect, Norfolk-street, Sunderland.

Doncaster.—Temperance Hall Home. Mr. F. Chambers, architect, 24, Boothferry-road, Goole.

Derby.—Institute for the deaf and dumb (5,000*l.*). Mr. A. Eaton, architect, Long Eaton.

Ellesmere Port.—School (7,000*l.*). Messrs. Deacon & Horsburgh, architects, 12, St. George's-square, Liverpool; Messrs. Duthie & Dobson, builders, 24, Comus-street, Liverpool.

Elton Fold.—Extensions at works, for Messrs. Mountain & Gibson.

Forrest Hall.—School. Mr. M. Forrest, architect, Moot Hall, Newcastle-on-Tyne.

Ferryhill.—Chapel. Mr. T. E. Davidson, architect, Pearl-buildings, Newcastle-on-Tyne.

Hull.—Block buildings, Anlaby-road, for Territorial Association. Messrs. Wellstead & Dosser, architects, Hull.

Huddersfield.—School, Wiggan-lane. Messrs. Garside & Pennington, architects, 2A, Wesley-street, Castleford and Ropergate, Pontefract, Yorks.

Hulton.—Block shops for Co-operative Society. Messrs. Henderson & Brown, architects, Two Fold-street, Bolton.

Hampshire.—Secondary school, Aldershot; girls' school, Basingstoke; girls' school, Winchester (8,475*l.*); classroom, Awbridge School (675*l.*); classrooms, etc., Bullocks Heath School (918*l.*); school, Eastleigh (11,169*l.*); school, Farnborough South (9,365*l.*); classroom, Milton Ashley School (660*l.*).; classroom, etc., Peterfield Boys' School (1,001*l.*). Mr. H. Barber, Clerk to Hampshire County Council, Winchester.

Haslingden.—Additions to secondary technical school. Mr. J. S. Green, Council Surveyor, Bury-road, Haslingden.

Middlesbrough.—Secondary school. Mr. A. Forrester, architect, 20, Albert-road, Middlesbrough.

Newtown.—School, Scot-lane. Mr. J. W. Horne, Secretary, Wigan Education Committee.

Oswaldtwistle.—Fire-station (13,000*l.*). Mr. R. Hunter, Borough Surveyor, Oswaldtwistle.

Pinner.—Billiard and club room at the George Inn, for Mr. J. Lardner.

Plymouth.—Extension of boiler-house at brewery, for Octagon Brewery Company, Ltd., Martin-street, Plymouth; twelve houses, Derry-avenue, Houndiscombe Estate, for Mr. Mussell, St. Gabriel's Church, Hyde Park-road and Peverell-avenue, the Vicar.

Redcar.—Additions to Zetland School. North Riding Education Architect, Northallerton.

Rotherham.—Twenty-eight houses, Cavendish-road, Selborne-street and Lindley-street, for Messrs. Charles Green's Sons; proposed additional office accommodation for Town Council, Mr. G. Jennings, Borough Surveyor, Rotherham.

South Shields.—Sailor's home (8,000*l.*). Mr. E. Liddle, architect, Newcastle-on-Tyne; Messrs. Veitch & Jordan, builders, Newcastle-on-Tyne.

St. Anne-on-Sea. — Additional technical school. Mr. H. Gregson, architect, St. Anne-on-Sea.

Sunderland. — Children's hospital. Messrs. W. & T. R. Milburn, architects, Fawcett-street, Sunderland; Mr. J. Huntler, builder, Sunderland.

Seaham Harbour.—School. Mr. T. Stephenson, builder, Sunderland.

Shotton Colliery.—School. Mr. W. Rushworth, Shire Hall, Durham.

Shieldhall (Glasgow).—Buildings at outfall works. Mr. McDonald, City Engineer, Glasgow.

Sutton.—Two shops, Grove-road. Messrs. P. V. Windebank & Co., builders, Hillcrombe-road, Sutton; thirty cottages, Chalk Pit House Estate, for Sir H. G. Smallman.

Tickle (Nelson, Lancs).—Post-office. Mr. J. H. Baldwick, architect, Town Hall, Nelson.

West Whorlton.—Additions to school. Mr. M. Forrest, architect, Moot Hall, Newcastle-on-Tyne; Mr. J. C. Mather, builder, Saltwell View, Gateshead.

Wallsend.—Two public amusement halls, Mr. J. McHarg, architect and builder, Park-road, Wallsend; additions to fever hospital, Mr. J. F. Davidson, architect, Willington Quay.

Worcester.—Additions to Grammar School. Mr. A. H. Parker, architect, "The Cross," Worcester.

Wrexham.—Theatre. Mr. T. Price, architect, Lord-street, Liverpool; Messrs. Parkinson & Son, Ltd., builders, Kent-road, Blackpool.

Worksop.—School (400 places). Mr. L. Maggs, architect, Shire Hall, Nottingham.

Willington.—Wing, Council school. Mr. R. E. Coates, Durham.

Wigan.—Two houses in Kenyon-road, for Mr. James Walkden; three cottages, Chapel-street, Lamberhead Green, Mr. Richard Pennington, architect, Library-street, Wigan.

Washington.—School (6,000*l.*). Mr. F. Renoldson, architect, 37, King-street, South Shields.

LONDON AND DISTRICT BOROUGH COUNCILS.

Acton.—A start has been made by the contractor in clearing the site for the new municipal buildings. The Surveyor, Mr. D. J. Ebbets, has been instructed to prepare a scheme and estimate for the construction of a convenience. The Surveyor has also been instructed to obtain tenders for new stables.

Battersea.—Repairs are to be carried out to ten roads at an estimated cost of 286*l.*

Chelsea.—The plaster from the ceilings of the men's and women's swimming baths is to be removed, and yellow deal or pitch-pine matched boarding substituted, at an estimated cost of 200*l.*

Deptford.—The London, Brighton, and South Coast Railway have agreed to pave the footway of Cold Blow-lane. The matter of the appointment of an assessor for the new branch library is referred to in another column.

East Ham.—As the Electric Lighting Committee do not contemplate giving a supply of current in the area south of the Docks, they have agreed to West Ham carrying their cables through to comply with applications from firms of manufacturers at Silvertown and North Woolwich who require energy for power purposes. The Works Committee have passed plans submitted by Mr. J. Young for twenty-seven houses in Marlow-road. The Engineer is to prepare plans for a mortuary adjoining the Town Hall.

Finsbury.—The Works Committee is to consider a petition from the inhabitants of Bath-street, City-road, that wood be substituted for granite in the carriage-way of the thoroughfare named.

Hackney.—Advantage is to be taken of the forthcoming disturbance of the roadways in Mare-street and Lower Clapton-road for the electrification of the tram lines, to carry out certain sewer works, at an estimated cost of 190*l.* Curbing and channelling are to be done in Upper Clapton-road, the approximate cost being 950*l.* Plans for the erection of one-story buildings on the north-east side of Berkshire-road (Hackney Wick) have been lodged by Mr. T. J. Wetherall on behalf of Messrs. E. Austin & Sons, and passed by the Works Committee.

Holborn.—Proceedings are to be instituted in the High Court with a view to the preservation of certain public rights claimed by the Borough Council in the courts of what is known as the Italian Colony. The wood blocks required for the repaving of Woburn-square are to be obtained from Messrs. William Griffiths & Co., Ltd., at 12*l.* 1s. 6d. per 1,000.

Islington.—The sum of 230*l.* is to be spent in erecting a wall at the rear of the disinfecting-station in Seven Sisters-road. The stabling at the Liverpool-road depôt is to be extended on plans drawn up by the Borough Engineer. The cost of the work is put down at 1,350*l.*

Lambeth.—A new urinal, at a cost of 157*l.*, is to be constructed at the White Horse public-house, Brixton-road. The Public Health Committee have had under consideration various sites for a proposed chapel of rest, but have not yet come to a decision on the matter. Liberty-street, Brixton, is to be made up at an estimated cost of 1,731*l.*

Lewisham.—Ravensbourne Park is to be paved and formed at an estimated cost of 2,964*l.* A sewer in High-street, Sydenham, is to be reconstructed, the cost being 150*l.* The Works and Highways Committee have passed the following plans:—Messrs. H. & G. Taylor, six houses, Caterham-road; Mr. J. Nicholls, six houses, Ewhurst-road; Messrs. Norfolk & Prior, twenty-one houses in Merchiston-road and Verdant-lane; Mr. L. W. Webb, six houses, Brookbank-road; Mr. J. Everington, on behalf of the Foster Estate, asked the Council's sanction to the construction of 7,257 ft. of new sewers proposed to branch into the Bromley-road sewer at various points. The Committee have approved the plans and forwarded them to the London County Council for their sanction.

Poplar.—Subject to a contribution of 25*l.* being received from Messrs. Braunstein towards the cost of the levelling of the site of a strip of land on the Grove Hall Estate, which is to be paved and added to the footway in Old Ford-road, the work is to be carried out by the Council. Messrs. J. Rider Hunt & Co. have been appointed quantity surveyors for the mortuary at 2½ per cent. upon the amount of additional work, and 1½ per cent. on omitted work. The question of the widening of the East India Dock-road between Brunswick-road and Barking Bridge-road has again been under discussion by the General Purposes Committee, and the Improvements Committee of the London County Council have been asked to receive a deputation to explain the local authority's position in the matter.

Stepney.—The Finance Committee have passed an estimate of 120*l.* for installing a smoke-prevention apparatus at the generating-station in Osborn-street. Tenders are at once to be invited for the river work in connexion with "Blyth's Wharf" extension scheme. A sewer is to be reconstructed in Corbett's-court, Hanbury-street.

Wandsworth.—The Chief Engineer of the London County Council has informed the Borough Council relative to the flooding of a portion of Ravenslea-road, Balham, that he is further regulating the discharge of storm waters down the Mayford-road sewer by increasing the height of the weir in the Balham High-road sewer at Marius-road. The Highways Committee have passed the following plans:—Mr. E. J. Jones, six houses with shops, Lacey-road, Putney; Mr. W. Wright, thirteen houses in Wimbledon Park-road and Seymour-road, Southfield.

West Ham.—The following plans have been passed:—Mr. M. Zimmermann, new bastol factory at the British Alcohol Company's premises, Wharf-street, Canning Town; Mr. F. L. Forge, new roads; Oxlees Estate, Carpenters'-road, Stratford; Messrs. Jenson & Nicholson, new grinding room at their premises, Warton-road, Stratford; Mr. J. Burchell, four houses, Garvary-road, Custom House.

SCHOOL BATHS.

IN connexion with the proposal to provide baths in schools, a Report of the Board of Education mentions that the only school baths which are actually installed in public elementary schools in this country are at Bradford. It is, however, intended to provide similar baths shortly in one or two new schools in London. The total cost of installing the baths at Bradford was 80*l.*, namely, 62*l.* for the plumber's work, and 18*l.* for the joiner's work. At two other public elementary schools in Bradford a special system of douche baths has been installed, at a cost of 60*l.* in each case, and at a fourth school ablutionary baths are to be put in shortly. The Report deals with a large new school at Wiesbaden "of beautiful exterior." The interior is highly finished, even the doors being decorated. There is a school bath in the basement, with a dressing-room opening directly into it. It is provided with forms and wooden partitions with pegs for clothes. Other details quoted are:—Bathroom, concrete, with two rows of four troughs about 4 ft. wide, dripping boards round and between troughs, which are 6 in. or 7 in. deep, and contain a board to stand on. Four boys are douched back to back in each trough. The attendant controls the water-mixing apparatus in an adjoining room, and looks through a window into the bathroom.

COURT OF COMMON COUNCIL.

A MEETING of the Corporation was held at the Guildhall on Thursday last week, Sir Marcus Samuel, in the absence of the Lord Mayor, presiding.

Improvement of Bishopsgate-street Without.—The Improvements and Finance Committee, reporting on the improvement of Bishopsgate-street Without, submitted for adoption an arrangement for acquiring the freehold interest in the premises No. 104, Bishopsgate-street Without, for the sum of 4,000*l.* The Court approved.

Paul's Cross.—The Coal and Corn and Finance Committee, reporting on a letter from the Venerable Archdeacon Sinclair, as to the provision, under the will of the late Mr. H. C. Richards, K.C., of 5,000*l.*, for the restoration of St. Paul's preaching cross, or the erection of a memorial thereof, asked for authority to take steps to enable the Dean and Chapter of St. Paul's to carry out the terms of the bequest. The Committee stated that there appeared to be some difference of opinion between Mr. Miles (the executor), the Archdeacon of London, and others, and the Dean and Chapter as to the way the bequest should be carried out. Mr. Miles contended that the Dean and Chapter were bound to re-erect Paul's Cross, while the Dean and Chapter thought that the memorial they proposed to erect would be in harmony with its surroundings and a true interpretation of the testator's wishes. Mr. Reginald Blomfield, A.R.A., had prepared the design. The Committee expressed the view that the responsibility of seeing that architecturally the new memorial and the existing fabric of the Cathedral were in harmony lay with the Dean and Chapter, and not with the Corporation. The report was adopted.

Improvements at the Coal Exchange.—The Coal and Corn and Finance Committee were authorised to carry out certain additional works at the Coal Exchange, including reconstruction of the sanitary arrangements, at a cost of 172*l.* 10s.

Drainage Work at the Guildhall.—The City Lands Committee reported that necessary and urgent drainage work under the Guildhall Justice-room has been carried out at a cost of 279*l.* 19s.

Dredging at Billingsgate.—The Bishopsgate and Leadenhall Markets Committee asked for authority to carry out necessary dredging works at Billingsgate Market, at an approximate cost of 500*l.* The Court agreed.

The Proposed Amalgamation of the London Institution with the Society of Arts.—Mr. George Briggs moved that it be referred to the Special Committee to consider and report forthwith upon the suggested amalgamation of the London Institution with the Society of Arts, with directions to consider whether the citizens of London could be in any way benefited by an extension or alteration of the Gresham Trust and a working arrangement being entered into with the Council of the London Institution in lieu of such proposed amalgamation. After a long discussion the motion was carried by a large majority.

Obituary.

MR. CHARLES KELL.

The death took place, on the 3rd inst., at his residence, 12, Royal-crescent, Harrogate, of Mr. Charles Kell, surviving partner in the firm of Kell Brothers, railway contractors and builders, of Leeds. Mr. Kell was the second son of the late Mr. William Ward Kell, engineer for the Great Northern Railway, and was still in the prime of life, being but 53 years of age.

General Building News.

LIVERPOOL CATHEDRAL.

It is satisfactory to learn that the Liverpool Cathedral is making good progress; the walls having got up to an average height of near 30 ft., and the Lady Chapel is so far forward that the vaulting is being proceeded with. Mr. Scott has made a new design for the east window, which he considers to be more in harmony with the general scheme of the building than the original design; and has also made a new design for the Chapter House, which is to be of the traditional octagon form, but with four windows instead of the more usual arrangement of a window in each face. The Committee have approved a design for the flooring of the Lady Chapel in squares of green and white marble.

CHICHESTER CATHEDRAL.

A meeting of the Executive Committee of Chichester Cathedral Restoration Fund was held on the 4th inst at the Bishop's Registry. Mr. Gordon P. G. Hills, Cathedral Surveyor, presented a report as to the position of the works of repair, and of future operations to be submitted to the General Committee, from which it appeared that after consultation with Mr. Somers Clarke he had come to the conclusion that the following matters claimed priority of action on financial as well as on structural grounds:—(1) The completion of the general repair and pointing of the walls, including dealing with the various cracks and settlements; (2) the west front and the south-west tower; (3) the general repair of the vaulting; and (4) the repair to the leadwork of the Cathedral roof. A long discussion ensued upon the report, and in the course of it Mr. Hills emphasised his opinion that no danger whatever was to be apprehended to the public by the condition of the interior vaulting, so that there would be no necessity to discontinue the services held in the nave. The following resolution was carried unanimously:—"That the repair of (*a*) the west front and south-west tower should first be taken in hand; then (*b*) the remainder of the pointing; and afterwards (*c*) the bay of the vaulting, which is at present receiving attention, should be properly dealt with." The first portion of the work to be proceeded with, it was estimated, would cost some 500*l.* at the least, with a further 500*l.* to complete the second portion of the work—interior vaulting of the Cathedral. Finally, as regards the roof, it was agreed that this must be postponed until a more careful examination could be made in order to form an approximate estimate of what it would cost.

METHODIST CHURCH, DARLINGTON.

At the village of Blackwell, near Darlington, the foundation-stones were recently laid of a United Methodist church. The building is to accommodate from 100 to 120 people. The architect is Mr. G. Walesby Davis.

MEMORIAL COTTAGES, QUINTON.

As a memorial to the late Mr. William Butler, of Messrs. Mitchells & Butlers, Ltd., two cottages, in which aged employees of the firm will live as pensioners, are being built. Messrs. Wood & Kendrick are the architects for the work.

SCHOOLS, WALTHAMSTOW.

The reopening of the Markhouse-road Schools, Walthamstow, recently took place after rebuilding and enlarging. The old schools, which were destroyed by fire in December, 1906, were erected some sixteen years ago, and accommodated 1,386 children in three departments, which formed a long range of one-story buildings fronting the Markhouse-road. Advantage was taken of the occasion to remodel the planning and to add a fourth department for junior mixed scholars, also to provide central halls for the boys', girls', and infants' departments, and to divide the buildings into two separate blocks, viz., a two-floor block for boys and girls and a ground-floor block for infants and junior mixed. This was effected by demolishing half of the infants' old school and throwing the space into the playground area. A new department for girls was formed on the ground floor out of part of the boys' and infants' old departments, and for the purpose of forming a first floor over same to accommodate the boys' department the old walls where shaky were taken down and rebuilt, and where sound were further strengthened by thickening and adding piers and by constructing angle buttresses on the external angles. The girls' old school was rebuilt and enlarged by the erection of two new classrooms, and the interior remodelled and adapted for the infants' and junior mixed departments. There are separate entrances, cloakrooms, playgrounds, offices, etc., for each department, an important point in the scheme being that the accommodation was increased by 360 school places (making a total of 1,746), and the total area of playgrounds also increased without at all enlarging the original site. The walls of the boys' department, first floor, being new, have a dado of golden-brown glazed bricks throughout, with a skirting of chocolate, and a capping band of green at top. The ground-floor dadoes throughout (of which there is over half a mile lineal) are 4 ft. high, and of 9 in. by 3 in. glazed tiles in white, brown, orange, and green tints, supplied and fixed by Messrs. Minton & Hollins. All rooms have air trunks and flues for the extraction of vitiated air, and an efficient supply of fresh air is ensured by not furnishing the Tobin air inlets with regulating flaps, thus making the inflow independent of the intermittent attention of the teacher. All dividing walls between classrooms, etc., are carried up to the apex and tight under slates for the purpose of preventing the spread of fire, it having been found that the absence of same in the old roofs led to the very rapid spread of the fire and the consequent destruction of the buildings. The floor and staircases of boys' department are of fire-resisting construction. The amount of compensation paid by the insurance company (for the buildings only), on a statement of claim prepared by the architect, was 8,000*l.*, and the contract for rebuilding was let to Messrs. R. & E. Evans, of Peckham, for 10,459*l.*, exclusive of tile dadoes. The heating apparatus (to two-floor block only, other rooms having open fires) was supplied by Mr. W. Cassidy, at a cost of 383*l.*, and the Westminster Patent Flooring Company supplied the maple-block flooring. The installation of electric light was provided by the Council's electrical staff, at a cost of 468*l.* The whole of the work was carried out under the personal supervision of, and from plans prepared by, the Committee's Architect, Mr. H. Prosser, and Mr. T. C. Lodder acted as clerk of works.

SUNDAY-SCHOOL EXTENSION, BOLTON.

From the designs of Messrs. Bradshaw & Gass, architects, an extension is being made to Claremont Baptist Schools, Bark-street, Bolton. The scheme includes rooms for the infants, a gymnasium, lads' club-room, a billiard-room, a men's games-room, a ladies' parlour, etc. The total cost is expected to be about 3,000*l.*

PROPOSED TOWN HALL, GIRVAN.

Plans have been prepared by Mr. Jennings, architect, Canterbury, for the new Town Hall which it is proposed to build at Girvan. The building will consist of three floors. On the first will be the Council-chamber and the principal hall, which, with the stage and gallery, will seat 752 persons, and on a special occasion 1,000. On the ground floor will be the police-court and committee-rooms, waiting-rooms, and lesser hall suitable for small meetings and social gatherings, and will accommodate about 240 persons; while in the basement will be waiting-rooms, kitchen, heating apparatus, etc.

KURSAAL SCHEME, MATLOCK BATH.

An inquiry was recently held on behalf of the Local Government Board by Mr. F. Stamford, A.M.Inst.C.E., at Matlock Bath, respecting the proposal to erect a kursaal, and the conclusion of an improvement scheme which has been in hand for some years. Payment empowered the Council to spend about 20,000*l.* in promenades, pavilions, a pump-room, etc. The Council has now acquired several important sites, on one of which it is intended to build a kursaal. Fountains will be erected, and a ballroom with theatre stage is provided for, together with a restaurant, offices for the Town Surveyor, Town Clerk, and the Council, besides a pump-room. The Council requires to borrow a further 8,500*l.* to complete the scheme.

INFECTIOUS DISEASES HOSPITAL, ALTRINCHAM.

On the 3rd inst. the first sod was cut of the site of the new hospital for infectious diseases which is to be erected by the Altrincham Council in Sinderland-lane Dunham Massey. The hospital, for which a loan of 11,300*l.* has been obtained, will have accommodation for thirty-four beds. Mr. William Owen, Manchester, has designed the building.

PROPOSED STREET IMPROVEMENTS, DUDLEY.

Mr. F. R. Tulloch recently held an inquiry at Dudley Town Hall into the application of the Town Council for sanction to borrow 6,100*l.* for the widening of High-street, and the widening and improvement of Blackbrook-road. The scheme has been carried forward with the primary object of finding work for the unemployed.

PARISH HALL, KEGWORTH, NOTTINGHAM.

A parish hall has been built at Kegworth from the designs of Mr. Joseph P. Dixon, of Nottingham. There are two cloakrooms, a hall which will seat 150 people, and at the far end is a room equipped with cooking apparatus, which can be used as a classroom. The whole is heated by hot-water radiators, and lighted by gas.

RESIDENCE FOR WOMEN STUDENTS, MANCHESTER UNIVERSITY.

It is proposed to open a new hall of residence for the women students of this University, and a house on the Behrens Estate, Fallowfield, is to be enlarged and improved with this object. In the building, when it is completed, there will be room for seventy-five students, the larger part of the existing house being retained. For the present, however, it is proposed to erect only the east block, so as to secure accommodation altogether for about sixty to sixty-four students. The plan has been prepared by Mr. Percy Worthington. The building proposed at present, inclusive of alterations to the existing house and furniture, will cost not less than 10,000*l.*

PROPOSED HOSPITAL, ASTON, BIRMINGHAM.

Into the application of the Aston Borough Council to the Local Government Board for sanction to borrow 600*l.* for the purchase of land and hospital buildings at Upper Witton, 600*l.* for the drainage, etc. of such site, and 120*l.* for appliances and works for the protection of the Council's scarlet fever hospitals against fire, Mr. R. J. Reece, M.D., and Mr. R. G. Hetherington, A.M.Inst.C.E., recently held an inquiry. Mr. F. W. Richardson, borough surveyor, gave evidence, describing the site and buildings.

CLUB PREMISES, BRANKSOME.

The Liberals of Branksome and district are building new club premises on a site in Salisbury-road. The erection is to be of best red Fordingbridge bricks, with Bath stone dressings. The architects are Messrs. Smart & Wyeth, of Branksome; Mr. J. Hillman, of Branksome, is the builder; and Mr. Jeffrey, also of Branksome, will do the masonry work. The cost is estimated at about 3,350*l.*, including 2,300*l.* for the building, and 500*l.* for furnishing.

NOTTINGHAM MECHANICS' INSTITUTION.

The proposals for increasing the accommodation at the Mechanics' Institution have at length taken definite shape, and plans for the enlargement, prepared by Mr. W. B. Starr, are now on exhibition at the Institution. Briefly, the new scheme provides for a refreshment-room on the second story in the part now occupied by the classrooms, for the rebuilding of the classrooms over the lecture-hall, and for a billiard-room over the new refreshment-room. Under this scheme the whole of the ground floor of the main building would be used for library and magazine purposes.

Stained Glass & Decoration.

SALISBURY CATHEDRAL.

As a memorial of Bishop Webb, three tiers of stained-glass windows have been placed in the north end of the morning chapel. The whole work has been designed and executed by Messrs. Powell.

Sanitary and Engineering News.

THE ESHOLT SEWAGE SCHEME.

The Esholt sewage scheme of the Bradford Corporation has now been approved by the Local Government Board. When the scheme of the Corporation was laid before the Board the latter requested the Corporation to consider whether a cheaper method of crossing the Aire valley could not be adopted. The Waterworks Engineer, Mr. Watson, had advocated an all masonry viaduct, estimated to cost 75,000*l.*, but the Sewage Engineer, Mr. Garfield, considered that an earthen embankment, estimated to cost 45,000*l.*, would meet requirements. The two proposals were discussed at considerable length by the City Council, and eventually it was decided to again recommend the Local Government Board to sanction the costlier scheme. The scheme as sanctioned does not, however—at any rate for the present—entail a cost, as originally estimated, of roughly a million pounds, for the question of the construction of bacterial filters, estimated to cost 420,000*l.*, stands postponed. In the early part of last year the Local Government Board intimated that they agreed to the suggestion of the City Council to leave this matter over, provided that the Corporation gave an undertaking that if, on or before the completion of the outfall sewer, or within five years of the date of the sanction of the loan, whichever might be the earlier, they were of opinion that the land available for irrigation at Esholt was sufficient to purify the sewage, they would submit the whole thing before the Board for their consideration, and abide by their decision. The opinion of the Corporation will be based upon their experiments with the sewage from those parts of the city which will not pass through the tunnel from Frizinghall under Wrose Hill to the Aire valley.

DERWENT VALLEY WATER SCHEME.

The completion of the large waterworks in the Derwent Valley, which are being constructed by a joint board, representing Sheffield, Nottingham, Derby, Leicester, and the counties of Derbyshire and Nottinghamshire, is likely, it is stated, to be seriously delayed in consequence of the discovery of "faults" in the strata, and the extra works thereby rendered necessary. Some time ago, the engineer, Mr. Sandeman, reported that, owing to the "faulty" condition of the broken and irregular strata in the hills into which the ends of the Howden dam are to be carried, some difficulty would arise in making that reservoir watertight, and a longer time than was expected must elapse before the reservoir could be filled with water. The engineer has since consulted Mr. G. H. Hill, of Manchester, and, from a joint report presented by the two gentlemen, it appears that it will be necessary to construct wing trenches for considerable distances along the two sides of the Howden reservoir. As regards the Derwent reservoir, so far as can be seen at present, whilst it is possible one wing trench will be required, the additional works will not be so considerable in extend as those at Howden. Mr. Hill and Mr. Sandeman also report, after the most careful surveys and after thorough consideration of all the facts brought to light during the construction of the works, that the site chosen for the Howden dam is, under all the circumstances, the best and least expensive that could have been selected, and that the difficulties which have arisen could not have been foreseen or guarded against.

Miscellaneous.

ST. GEORGE'S (HANOVER-SQUARE) HALL.

In reference to a paragraph on this building which appeared on page 161 in our last issue, Mr. A. J. Bolton, of Lincoln's Inn-fields, writes to say that he, and not Messrs. Ernest George & Peto, was the architect of the Hall erected in 1887.

LAND VALUATION, WESTERN SUBURBS OF LONDON.

A claim for compensation in respect of parcels of freehold land, of the Clitherow estate, on the south-east side of Ealing and Hanwell parishes, was heard in the Middlesex Guildhall, Westminster, recently. The suit was instituted against the Metropolitan District Railway Company by the Rev. W. J. Stracey-Clitherow, for whom appeared Mr. J. C. Lewis-Coward, K.C., and Mr. E. F. Spence; the railway company were represented by Mr. Roskill, K.C., and Mr. L. Macassey. The case was settled by a formal verdict for 10,500*l.*, and upon certain terms

endorsed on the counsels' briefs, in respect of an aggregate claim for 15,290*l.* in the matter of frontages, amounting to 5,030 ft., in Clacton, Cawdor, Cross, and Boston roads, now being developed for building purposes. The company retained as experts Mr. Howard Martin, Mr. L. Vigers, and Mr. J. H. Oakley, and Mr. Douglas Young, FF.S.I.; for the claimant evidence was given by Mr. B. I'Anson Breach, Mr T. Woods, of Hounslow, Mr. R. J. Steel and Mr. Hall-Jones, of Ealing, who made the computation above cited.

AN OLD COFFEE-HOUSE IN FLEET-STREET.

The beneficial lease, with possession and goodwill, of the old-established business of Groom's coffee-house, is to be offered for sale at the Mart. The house, No. 16, Fleet-street, stands at the corner, west, of Inner Temple-lane, and next to the no less famous Rainbow Tavern. The business was founded there 200 years ago by one of the family. In the *Gentleman's Magazine*, June, 1807, is an announcement of the death of Mr. Thomas Groom, "many years an eminent confectioner and reputable inhabitant of Fleet-street." After the death, about twenty years ago, of Mrs. Groom, the lease and goodwill of the coffee-house were placed in the market. The Rainbow boasts of a history which begins with the closing years of the Commonwealth, and claims to be the second, or the third, coffee-house opened in London. J. Y. Akerman describes a halfpenny token bearing the name, with that sign, of James Farr, and date "1666." Hatton records that Farr, a barber, had been presented by the Inquest of St. Dunstan-in-the-West parish, 1657, "for making and selling a sort of liquor called coffee, as a great nuisance and prejudice to the neighbourhood."

THE LOCAL GOVERNMENT ANNUAL.

"The Local Government Annual and Official Directory for 1909" (27A, Farringdon-street, E.C.) is the eighteenth year of publication of a useful and well-arranged Directory, edited by Mr. S. Edgecumbe Rogers, of local government. The main portion of the book is devoted to the Directory, which gives the names and addresses of the chief officials of all corporations, London borough councils, county councils, boards of guardians, urban and rural district councils, county and borough asylums, etc., throughout the kingdom, as well as a list of the City Companies of London. In addition to the Directory, there is much useful information relating to baths and washhouses and electric light undertakings in the boroughs of London, and an abstract of the Local Government legislation of 1908. The charges for water and gas in London are shown, and the population of the various provincial unions is given. There is also a list of all the parks and open spaces of the Metropolis, with the local authorities controlling them. The price of the "Annual" is 1s. 6d.

GLASGOW SCHOOL OF ARCHITECTURE CLUB.

A lecture on "The Art of Building" was delivered by Mr. James Salmon, F.R.I.B.A., on the 5th inst., in this School of Art. The lecturer held that life is eternal and pervades every region to which knowledge and sympathy lead it, and that the past and the future exist through knowledge, as China exists to us in so far as our knowledge may create it. Art, in the supreme sense, is the inherent significance expressed by our work. It is the expression of the divine soul of man, and is independent of this accidental human life in this accidentally situated planet. Science is the action; art is the meaning. Science applies to the material and the material wants; art is the expression intertwined through the work of things which will eternally have meanings, even when mankind is gone and matter has changed her structure. Architecture is held in bondage by law. She is "cribbed, cabined, and confined" by the existing system of land tenure. The lecturer advocated land values taxation as a means of producing diviner forms of architecture.

NEW PUBLIC BUILDINGS IN HAMPSHIRE.

Mr. George T. Hine, architect, Parliament-street, Westminster, who was engaged in November, 1899, by the Hampshire County Council for the erection of a new asylum at Park Prewett, Hants, has been re-engaged by the Council in connexion with this matter. In 1902 the building of the asylum was postponed, and Mr. Hine was paid for his services. He agreed then that if the work was proceeded with at any time within five years under his direction he would allow the payment mentioned to merge in his ordinary commission, and, notwithstanding that this period has elapsed, the above is to be observed, and the same terms are to be adhered to. Mr. Hine is to find a quantity surveyor at 1½ per cent. The Public Works and Building Committee are to carry out the work of the erection of new County Council offices in St. James-street, Winchester, the plans for which were prepared by Mr. Taylor, the County Surveyor, and generally approved by Mr. T. G. Jackson, R.A., Buckingham-street, Strand, to whom they were submitted. The cost of a three-story building is estimated at 19,500*l.*

LONDON COUNTY COUNCIL CENTRAL SCHOOL OF ARTS AND CRAFTS.

In the department of architecture and building crafts of this school, a course of five lectures on the materials of construction and decoration will be delivered by Mr. Noel Heaton, B.Sc., F.C.S., on consecutive Thursday evenings, at 8.30 p.m., commencing February 18, 1909. This course is intended primarily for students of architecture, and will supplement the instruction given in building construction. The materials dealt with will include metals, natural building materials, artificial building materials, and decorative materials. The course is open to students of the school, and architects and others interested in the subject are also invited to attend.

MONUMENT TO A FRENCH SCULPTOR.

Mr. Alfred Boucher, one of the greatest of French sculptors, has completed the monument to the late Paul Dubois, which is to be erected by subscription at his native town, Nogent-sur-Seine. Dubois was Director of the Ecole Nationale des Beaux-Arts. The monument to him will include two large decorative figures in bronze representing Painting and Sculpture.

ANCIENT STONE MONUMENTS.

Sir Norman Lockyer delivered a lecture on "The Use and Age of Ancient Stone Monuments" at a meeting of the Society of Cymmrodorion, held on January 22. Sir Isambard Owen presided. The lecturer remarked that in the ancient stone alleyways and cromlechs in this country there was so strong a resemblance to the Egyptian temples that unquestionably the people who built those magnicefint monuments in Egypt from 2,000 to 4,000 years B.C. got their style of architecture from those who had built cromlechs and lived in them. The ancient stone monuments which took the form of circles represented an advance which was the outcome of the poverty or the economical ideas of the builders. In one circle with a number of outstanding stones pointing in different directions they obtained, from an astronomical point of view, all that was secured by the priests of Thebes in building three temples. The position of the outstanding stones in the circles was such as to point to alignments by which the season of the year and the hour before sunrise might be determined by solar and stellar observations. In the Gorsedd they had the same alignment, and he was content to believe that the Welsh Gorsedd was at least forty centuries old. Another way of securing alignments was by double circles. The most complicated system of such circles of which he knew was that at Botallek, which was destroyed by tin-workers some years ago. Imagination had run riot as to the use of stone monuments, and a plain story of fact would have difficulty in forging ahead through the morass of fanciful suggestions which had been made. With the help of many friends, and as the outcome of the devotion of two or three annual holidays to the work, he had measured 140 or 150 alignments. Classifying these, it was found that a very small number of directions had been used. Indeed, they might be divided into two distinct groups—solar and stellar. A people without almanacs and having no idea of the length of the year would find life impossible unless they had some general means of knowing when to plough and sow; and the circles were, astronomically, simply calendars and night dials: and their alignment with a view to observations of the solstice and of the stars Capella and Arcturus enabled the period at which the monuments were constructed to be fixed at dates ranging from 1400 B.C. to 2200 B.C.

THE SCHOOL OF ART WOOD-CARVING, SOUTH KENSINGTON.

The following particulars are from the annual Report of this school:—

Of the 181 students who attended the school eighty were trade carvers, professional teachers, or students learning the craft professionally. These students were admitted either wholly free or at reduced fees. Teachers under the London County Council were admitted free to the Saturday classes, and also to the evening classes. There are now in the school six boys sent by the West Ham Borough Council. Two are in their first, two in their second, and two in their third year of training. All are making satisfactory progress, and show great interest in their work. In October Mr. Bartlett, of the Bromsgrove Guild, applied to the Manager for two young carvers to help with an order which the Guild had on hand; two boys were sent down to Bromsgrove, the Guild paying all their expenses and also wages at the trade rate. During their stay the boys gained a most useful insight into the practical work of a carver's shop. This Guild has employed three of our students who had finished their training at the school. There are at present in the school two cripple boys admitted free; it is hoped they may prove strong enough to earn their living as wood-carvers when their education is completed. In one case, however, this is somewhat doubtful. There are two Kent scholars in the school whose reduced fees are paid by the Kent County Council. Satisfactory reports continue to be received from students who have left the school. Last Christmas the Manager received a letter from a former student (aged 19) who is now at work in Paris, and who has had continuous employment in the trade since he left the school eighteen months ago.

PADDINGTON BATHS AND WASHHOUSES, QUEEN'S-ROAD, BAYSWATER.

With respect to the proposed sale of these premises to Messrs. William Whiteley, Ltd., at a price of 60,000*l.*, we may mention that the baths and washhouses were erected in Queen's-road, on the west side, in 1893, after plans and designs by the late Lewis Henry Isaacs. It is stated that the sale price for the buildings and their site would cover the original outlay upon both, as well as upon the engineering plant and equipment, and exceeds the computed cost of a new site and buildings, with increased accommodation and improved works and appliances.

BRITISH MUSEUM: NEW OFFICIAL PUBLICATIONS.

A catalogue, prepared by Mr. W. B. Walters, F.S.A., assistant in the Department of Greek and Roman Antiquities, is issued of the Roman pottery in the Departments of Antiquities. The volume contains forty-four plates, with 464 pages of text, introduction, etc., and is sold at the price of 2*l.* A copiously illustrated guide to the Egyptian Collections, with a text descriptive of the origin, customs, language, religion, and history of the inhabitants of Egypt, can now be obtained for 1s.

H.M.'S PATENT OFFICE.

At the end of the current month Sir Cornelius N. Dalton K.C.M.G., C.B., will retire as Comptroller-General of Patents, Trade Marks, and Designs, to which office he was appointed, from the Local Government Board, in 1897. He will, we gather, be presented with a highly gratifying testimonial by the examiners and the other members of the Patent Office staff. Sir Cornelius Dalton will be succeeded by Mr. George Ranken Askwith, K.C., an Assistant Secretary in the Board of Trade, Railway Department, who has made a considerable reputation as arbitrator in many trade disputes. Mr. Askwith has acted for the Crown in respect of claims to peerages, and was employed as counsel to the Commissioners of Works on the Venezuelan Arbitration. He is a son of the late General W. H. Askwith, Colonel-Commandant, R.A., and, proceeding from Marlborough School to Brasenose College, Oxford, in 1880 took a first class in history.

JEDBURGH ABBEY.

Up till about 1870 the greater part of the nave of this building—one of the most interesting historical monuments in Scotland—was used as a parish church, and this was the cause of much damage to the mason work. Since that date, with the exception of part of the north transept, it has been roofless and exposed to attack on all sides by the weather. When the new parish church was erected, the nave was cleared out, and considerable repairs were executed at the expense of the late Marquis of Lothian. During the last six months a thorough examination and repairing has been going on under the superintendence of Sir Rowand Anderson, F.R.I.B.A., of Edinburgh. This work is to be resumed in the coming spring, when the parts of the building not yet dealt with will be carefully gone over. No restoration is being undertaken, the main object being the careful preservation of every fragment of the old work, and to this end the exclusion of water and frost from the walls. All the ivy and seedling trees are being removed, and to make up for a certain loss of picturesqueness from doing this, creepers which do not effect a lodgment in the mason work will be trained over certain parts of the building. Sir Rowand Anderson has also examined and reported on a similar overhauling of new or Sweetheart Abbey, near Dumfries.

MISCELLANEOUS—*Continued on page 199.*

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, —; Contracts, iv. vi. viii. x.; Public Appointments xix.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

FEBRUARY 20.—**Guildford.**—BRIDGE.—Designs are invited for proposed light footbridge over the River Wey, Guildford, constructed in oak or other materials. All information can be obtained from Mr. C. G. Mason, C.E., Tuns-gate, Guildford.

FEBRUARY 20.—**Penclawdd.**—CHURCH.—Bethel Independent Church, Penclawdd, is prepared to receive plans for the erection of a new chapel to contain 800 seatings. The approximate cost of chapel, including heating and acetylene lighting apparatuses, to be 3,000*l.* A premium of 5*l.* 5s. will be awarded the architect whose plan the committee may select. Plans to be deposited with the Secretary, Mr. John Rees, Penlan, Penclawdd, S.O.

MARCH 1. — **Torrington.** — MEMORIAL CROSS.—The Committee of Torrington and District Rolle Memorial invite designs for a memorial cross (preferably of granite), to be erected on a site in the Churchyard, Torrington. Cost, inclusive of erection, etc., not to exceed 100*l.* The Committee will pay 2*l.* 2s. for the selected design, but no other charge or expense. Particulars from Mr. George M. Doe, Town Clerk, Great Torrington.

MARCH 31. — **Middlesbrough.** — NEW LIBRARY.—The Free Library Committee invite plans for proposed new Library to be erected in Dunning-road and Grange-road, East Middlesbrough. Premiums of 50*l.*, 30*l.*, and 20*l.* Conditions, with plan of site, may be obtained on application to Mr. Alfred Sockett, Town Clerk, Municipal Buildings, Middlesbrough. Deposit, 2*l.* 2s. For further particulars see advertisement in our issue of December 26.

Contracts.

BUILDING.

FEBRUARY 13.—**Dundee.**—SHEDS.—The Trustees of the Harbour of Dundee invite offers for the supply and erection at Dundee of from one to four iron sheds, each to be 79 ft. long, 50 ft. broad, and 20 ft. high to eaves, and a cubic capacity of 100,000 ft. Plans, etc., may be obtained from Mr. J. Hannay Thompson, M.Inst.C.E., Harbour Engineer, Harbour Engineer's Office, Dundee.

FEBRUARY 15-26.—**Abertillery (Mon.).**—GENERATING-STATION.—The U.D.C. invite tenders for the erection of a small electricity generating-station at Abertillery. Bills of quantities and form of tender prepared by Mr. Hamilton H. Turner on application to the architect, Mr. Maurice E. Webb, 19, Queen Anne's-gate, Westminster, S.W., on payment of a deposit of 1*l.* 1s. The drawings, etc., may be seen at the offices of the U.D.C. or the architect.

FEBRUARY 15.—**Cambridge.**—ADDITIONS, WORKHOUSE INFIRMARY.—The Guardians invite tenders for the making of certain additions and alterations on the female side at the Workhouse Infirmary, Mill-road, Cambridge, in accordance with the plan, etc., prepared by Mr. Sidney French, architect. The plan, etc., may be seen, and the quantities obtained, at office of Mr. John Congreve, Clerk to the Guardians, 55, St. Andrew's-street, Cambridge.

FEBRUARY 15.—**Pontypool.**—CHURCH ALTERATIONS, ETC.—Carrying out of certain alterations and renovations to Crane-street Baptist Church, Pontypool. The drawings and specification may be seen at the office of the architect, Mr. D. J. Lougher, Bank-chambers, Pontypool.

FEBRUARY 15.—**Udny.**—STEADING.—Estimates are wanted for the mason, carpenter, and slater works in connexion with the restoration of part of the Steading at Newseat of Dumbreck (Estate of Dumbreck, Udny), Gordon's College Lands. Plans, etc., may be seen with the tenant.

FEBRUARY 15.—**Widnes.**—GARAGE, SHOP, ETC.—The Corporation of Widnes invite tenders for the erection of garage, repair-shop, offices, stores, and carshed in the Town Hall yard. Plans may be seen, and bills of quantities obtained, upon application to Mr. John S. Sinclair, A.M.Inst.C.E., Borough Surveyor, Town Hall, Widnes, upon payment of 1*l.* 1s.

FEBRUARY 16.—**Bridlington.**—HOUSE.—Erection of a dwelling-house in Cardigan-road, Bridlington, for Mrs. Dodgson. Plans, etc., may be seen at office of Mr. Joseph Shepherdson, architect, 8, Quay-road, Bridlington.

FEBRUARY 16. — **Epsom.** — STOREKEEPER'S OFFICE. — Epsom U.D.C. invite tenders for the erection of a storekeeper's office, etc., in their depôt at the rear of their offices, Bromley Hurst, Epsom. Plans, etc., can be seen at the Surveyor's Office, Bromley Hurst, Epsom.

FEBRUARY 17.—**Aberavon.**—HOTEL.—Rebuilding of the Jersey Beach Hotel, Aberavon. Names to Mr. Frank B. Smith, M.S.A., architect and surveyor, Port Talbot, when full particulars will be furnished.

FEBRUARY 17. — **Birtley Fell.** — SHELTERS, ETC. — Chester-le-Street R.D.C. invite tenders for the erection of two shelters, one dining-hall, and a laundry block at their consumptive sanatorium, Birtley Fell. All intending contractors to write to Mr. John H. Mole, Surveyor to the Council, enclosing deposit of 1*l.* 1s., and making an appointment to meet the Surveyor at the Union Offices, Chester-le-Street, between 9 and 10 a.m., when plans may be examined and necessary particulars obtained.

FEBRUARY 17.—**Dewsbury.**—WORKSHOP. — Erection of a large workshop at Watergate, Dewsbury. Plans, etc., may be seen, and bills of quantities obtained, at offices of Messrs. Kirk, Sons, & Ridgway, architects, surveyors, and valuers, Market-place, Dewsbury.

FEBRUARY 17.—**Dunfermline.**—SHOP AND HOUSE.—Estimates are wanted for the mason and brick, carpenter and joiner, plumber, slater, cement, and plaster works proposed to be executed in erecting shop and dwelling-house at Townhill-road, Dunfermline, for Mr. J. Watters. Schedules of measurements may be had on application to Messrs. Muirhead & Rutherford, architects and surveyors, 4, Abbey Park-place, Dunfermline.

FEBRUARY 17.—**Hereford.**—EXTENSIONS OF COLLEGE.—Herefordshire C.C. Training College Committee invite tenders for the construction of certain extensions to the Hereford Training College. The plans, etc., may be seen, and bills of quantities, etc., obtained, at the office of the County Surveyor, Shire Hall, Hereford, on payment of 2*l.* 2s.

FEBRUARY 17.—**Leeds.**—REPAIRS TO SCHOOLS.—Leeds Education Committee invite tenders for repairs to schools for three years. Conditions of contract, list of schools, etc., may be obtained on application at the Architect's Section, Education Offices.

FEBRUARY 17. — **New Sarum.** — ALTERATIONS TO POLICE-STATION.—The T.C. invite tenders for carrying out alterations at the City Police-station. Bill of quantities, with form of tender, may be obtained on application to Mr. W. J. Goodwin, A.M.Inst.C.E., City Engineer and Surveyor, Municipal Offices, Salisbury.

FEBRUARY 18.—**Bridlington.**—CHAPEL ENTRANCE, ETC.—New entrance and staircase at the Primitive Methodist chapel, for the Trustees. Drawings, etc., may be inspected at the office of Mr. J. Earnshaw, architect, Carlton House, Bridlington.

FEBRUARY 18.—**Consett.**—READING, ETC., ROOMS — The Consett Iron Company, Ltd., invite tenders for the alterations necessary in the conversion of Consett British Schools into reading and recreation rooms. Plans, etc., may be seen upon application to the company's architect at their general offices, Consett.

FEBRUARY 18.—**Cork.**—COTTAGES.—Cork R.D.C. invite tenders for building seventeen labourers' cottages, making new road, laying out and fencing plots, on field at Coolflugh, near Tower. Plans, etc., can be obtained from the Clerk to the R.D.C. on payment of 5s.

FEBRUARY 18.—**Sea Houses.**—PREMISES.—For reconstruction of premises at Sea Houses, Chathill, for Mr. James Ewing. Plans, etc., may be seen at his office.

FEBRUARY 18. — **Walton-on-the-Naze.** — PUBLIC CONVENIENCES.—Tenders are invited for the construction of public conveniences for the U.D.C., Walton-on-the-Naze. Plans, etc., can be seen, and quantities obtained, upon application to Mr. H. W. Gladwell, Surveyor, Town Hall-buildings, Walton-on-the-Naze, upon payment of deposit (2*l.* 2s.).

FEBRUARY 19. — **Dublin.** — DISPENSARY. — New dispensary buildings for the Governors of Jervis-street Hospital. The plans, etc., can be seen at office of Messrs. William H. Byrne & Sons, architects, 20, Suffolk-street, Dublin. Quantities have been prepared by Messrs. D. W. Morris & Co., surveyors, 68, Harcourt-street, Dublin, which can be obtained on application by lodging 2*l.* 2s. with the surveyors.

FEBRUARY 19.—**Pontardawe.**—CHAPEL EXTENSION.—Extension of Alltwen Congregational Chapel, Pontardawe, and the adding of an organ-chamber thereto. Plans, etc., may be seen with the Secretary, Mr. R. E. Thomas, Paris House, Pontardawe, or at office of Mr. W. Beddoe Rees, architect, 3, Dumfries-place, Cardiff, where bills of quantities may be obtained on deposit of 3*l.* 3s.

FEBRUARY 19.—**Taunton.**—RESIDENCE.—The Council of Taunton School, Taunton, invite tenders for the erection of a detached residence for the headmaster in the grounds of the school. The plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. F. W. Roberts, F.R.I.B.A., architect, 2, Hammet-street, Taunton.

FEBRUARY 19.—**Woore.**—SCHOOL WORKS.—Shropshire Education Committee invite tenders for various works at Woore Council School, including alterations and additions to the school. Plans, etc., may be seen, and forms of tender obtained, at the Schoolhouse, Woore.

FEBRUARY 20.—**Cwm.**—INSTITUTE.—Building new institute at Cwm, Mon., for the Committee. Plans, etc., may be inspected, and quantities obtained, on a deposit of 2*l.* 2s., at office of Mr. Stanley H. Hutchins, architect, Risca, Mon.

FEBRUARY 20. — **Doncaster.** — HOTEL.—Tenders invited (including all trades) for the reconstruction of Golden Lion Hotel, Cleveland-street, Doncaster, belonging to Hartley's Brewery Company, Ltd., Cowick, Snaith. Plans, etc., can be seen, and all information obtained, at office of Mr. James Heseltine, architect and surveyor, Old Castle Drawing Office, Pontefract.

FEBRUARY 20.—**Fermoy.**—COTTAGES.—The R.D.C. invite tenders for the building of the labourers' cottages, and for the fencing of the cottage plots. Plans, etc., can be obtained from the Clerk of the Council on payment of 5s.

FEBRUARY 20.— **Holland.**— COTTAGES, ETC.— The Small Holdings Committee of the Holland C.C. invite tenders from builders and contractors in the parts of Holland for three sets of cottages and farm buildings. A copy of the plans, etc., can be obtained from the architect, Mr. Jas. Rowell, Church-lane, Boston, on depositing a sum of 2*l.*

FEBRUARY 20.—**Sheffield.**—HOSPITAL WARD BLOCKS.—The work required in the erection of new ward blocks and kitchens, Royal Infirmary, Sheffield. Names to Messrs. Gibbs & Flockton, architects, 15, St. James's-row, Sheffield.

FEBRUARY 20.—**Tredegar.**—CHAPEL.—Erection of a chapel in Arthur-street, Tredegar, for the Bethania Congregational Church. Plans, etc., may be seen with Mr. W. S. Williams, architect, Elmwood House, Tredegar.

FEBRUARY 20.—**Winsford.**—CLASSROOMS. — Erection of additional classrooms, lecture-room, etc., at the United Methodist Free Church School, High-street, Winsford. Plans, etc. (no quantities), may be seen on application to Messrs. Alfred Price & Son, architects and surveyors, Sandbach.

* FEBRUARY 22. — **Coventry.** — OFFICES, ETC.—The Coventry Gas Committee invite tenders for erection of buildings at the Foleshill Works. See advertisement in this issue for further particulars.

FEBRUARY 22.—**Grange-over-Sands.**—PUBLIC CONVENIENCES, ETC.—The U.D.C. invite tenders for (*a*) erection and fitting of public conveniences near the Crown Hotel, in Main-street, Grange; (*b*) making-up of Charney-road, Grange. Plans, etc., may be inspected, and any further information obtained, at the office of Mr. Thos. Huddleston, Engineer and Surveyor to the Council, Council Offices, Grange-over-Sands.

FEBRUARY 22.—**Todmorden.**—SCHOOL. — Todmorden Education Committee invite tenders for masons', joiners', slaters', plumbers', heating engineers', electricians', plasterers', and painters' trades required in the erection of a new secondary school on the Stile Estate, Todmorden. Specifications, etc., on application to the architect, Mr. Jesse Horsfall, F.R.I.B.A., 4, Chapel-walks, Manchester, and Burnley-road, Todmorden.

* FEBRUARY 23.—**Cardiff.**—FARM BUILDINGS.—The Cardiff Mental Hospital Visiting Committee invite tenders for farm buildings at Whitchurch, near Cardiff. See advertisement in this issue for further particulars.

FEBRUARY 23.—**Carron.**—HALL.—Estimates wanted for the mason, carpenter, slater, plasterer, painter, and glazier work of public hall to be erected at Carron, Morayshire. Plans, etc., can be seen at Post-office there.

* FEBRUARY 23.—**Sedgley.**—COOKERY, ETC., CENTRES.—The Staffordshire Education Committee invite tenders for combined cookery, laundry work, and handicraft centres at Upper Gornal, Sedgley. See advertisement in this issue for further particulars.

FEBRUARY 24. — **Canterbury.** — COTTAGE. — For the erection of a new cottage for the head attendant at Canterbury Borough Lunatic Asylum, Canterbury. Copy of the bills of quantities and plans and specifications at the office of Messrs. Jennings & Gray, architects, 4, St. Margaret's-street, Canterbury, on payment of the sum of 3*l.*

FEBRUARY 24. — **Edinburgh.** — NEW SLAUGHTER-HOUSES, GORGIE.—The Magistrates and Council invite tenders for the various building works. Plans, etc., prepared by Mr. James A. Williamson, A.R.I.B.A., City Superintendent of Works, Public Works Office, City-chambers, from whom schedules, etc., may be obtained. A deposit of 3*l.* 3s. (payable only by crossed cheque) will be required for the various schedules.

* FEBRUARY 24.—**Hampstead.**—ALTERATIONS TO CONVENIENCES.—The London C.C. invites tenders for alteration and enlargement of conveniences at Golder's Hill Park, Hampstead. See advertisement in this issue for further particulars.

FEBRUARY 24.—**Lostwithiel.**—HOUSES.—For the erection of three or five houses at Lostwithiel, for the Lostwithiel Building Company, Ltd. Plans, etc., may be seen at the office of Secretary, Mr. J. Venning, auctioneer, etc., Lostwithiel.

FEBRUARY 24. — **Pontypool.** — HOSPITAL.—Tenders are invited for the erection of additions to the Pontypool and District Hospital, Pontypool. Plans, etc., may be seen at the Hospital, and at the office of Mr. Sidney Williams, M.S.A., architect, Borough Chambers, Wharton-street, Cardiff. Bills of quantities may be obtained from the architect on deposit of 1*l.* 1s.

* FEBRUARY 25.—**Hoddesdon.**—SCHOOL.—The Hertfordshire C.C. invite tenders for the erection of a

school at Rye Park. See advertisement in this issue for further particulars.

FEBRUARY 25.—**Morley.**—ALTERATIONS TO ENGINE-HOUSE.—Tenders wanted for the various works required in the alterations to engine-house and new engine bed at the Gillroyd Mills, Morley. Plans, etc., may be seen, and a copy of the quantities obtained, at offices of Mr. T. A. Buttery, F.I.A.S., architect, Queen-street, Morley, and 1, Basinghall-square, Leeds.

FEBRUARY 26.—**Newbiggin.**—ALTERATIONS, ETC.—Tenders are invited for alterations and additions to Newbiggin Police-station. Plans may be seen at office of Mr. J. A. Bean, County Architect, The Moothall, Newcastle-on-Tyne, and a copy of the bills of quantities can be obtained upon depositing cheque for 1*l.* 1s.

FEBRUARY 27.—**Mountain Ash.**—SCHOOL WORKS.—The Education Committee invite tenders for building additions to and altering the Ynysybwl Mixed School. Plans, etc., may be seen, and forms of tender, obtained, at the office of the Architect, Mr. W. H. Williams, Town Hall, Mountain Ash.

* MARCH 1.—**Butlock's Heath.**—ADDITIONS.—The Southampton C.C. invite tenders for additional classroom, etc., at Butlock's Heath Council School. See advertisement in this issue for further particulars.

MARCH 2.—**Bray.**—LIBRARY.—The U.D.C. of Bray (Public Library Committee) invite tenders for erection of a public library at junction of Florence-road and Eglinton-road, Bray, in accordance with plans, etc., prepared by Mr. J. Charles Wilmot, C.E., 3, Lower Merrion-street, Dublin. Plans, etc., may be inspected at the Town Hall. Intending contractors will be required to deposit the sum of 2*l.* 2s. with Mr. D. Mullally, Deputy Clerk, Town Hall, Bray, for form of tender and copy of bill of quantities prepared by Messrs. D. W. Morris & Co., 68, Harcourt-street, Dublin.

* MARCH 3.—**Batley.**—CHURCH.—The Committee of St. Andrews Church, Purwell, Batley, Yorks, invite tenders for erection of new church. See advertisement in this issue for further particulars.

MARCH 13.—**Perth.**—GREENHOUSES.—The T.C. of Perth invite offers for the construction of greenhouses, etc., at Wellshill Cemeteries. Plans of the work may be seen, and specifications, etc., obtained, at the office of Mr. James W. Bayne, Superintendent of Cemeteries, Wellshill, Perth.

MARCH 15.—**Birkenhead.**—TENEMENT DWELLINGS.—The Corporation of Birkenhead invite tenders for the erection and completion of twenty-two double tenement dwellings on land bounded by Egerton-street, Getley-street, and Tunnel-road. Plan, etc., can be seen, and bill of quantities, etc., obtained, on application at the office of Mr. Chas. Brownridge, M.Inst.C.E., Borough Engineer and Surveyor, upon a deposit of the sum of 1*l.* 1s.

* MARCH 16.—**Enfield.**—SCHOOLS.—The Enfield Education Committee invite tenders for erection of a block of schools at Lavender-road. See advertisement in this issue for further particulars.

NO DATE.—**Beaconsfield.**—HOUSES.—Erection of two houses on the Burke's Estate, Beaconsfield. Applications for bills of quantities must be accompanied by a deposit of 1*l.* 1s. Messrs. Burgess & Myers, architects and surveyors, Beaconsfield.

NO DATE.—**Chopwell.**—HOUSES, ETC.—Erection of three houses and shops at Chopwell. Names to Mr. D. M. Spence, architect and surveyor, Shotley Bridge. Quantities will be supplied upon payment of deposit of 10s. 6d.

NO DATE.—**Gorseinon.**—HOUSES.—Twelve houses at Gorseinon for the Eynon Estate Company. Names immediately to Messrs. C. S. Thomas, Meager, & Jones, architects, Wind-street, Swansea.

NO DATE.—**Horrabridge.**—HOUSES.—Erection of two semi-detached houses at Queen's Park, Horrabridge. Plans, etc., may be seen, and quantities obtained, at No. 8, Princess-square, Plymouth. Messrs. King & Lister, architcts and surveyors.

NO DATE.—**Loughor.**—VESTRY.—Tenders are invited for rebuilding the vestry, forming heating-chamber and organ-chamber, etc., Loughor Parish Church. Plans, etc., may be inspected and further information obtained of Mr. Thomas Arnold, C.E., The Park, Llanelly.

NO DATE.—**Portobello.**—HALL.—The Edinburgh Marine Gardens, Ltd., Directors invite tenders for the erection of the main hall at the Marine Gardens, Portobello. Plans may be seen, and schedules of quantities obtained, at the office of Mr. J. D. Gibson, surveyor, 60, Frederick-street, Edinburgh.

NO DATE.—**Whitby.**—SHED.—The Burial Authority invite tenders for the erection of a shed at the cemetery. Particulars may be obtained from the Superintendent.

NO DATE.—**Wimbledon.**—HOUSES.—Four houses at Wimbledon. Plans, specifications, etc., prepared by Messrs. Belfrage & Saville, architects, may be inspected at their offices, 27, Chancery-lane, W.C.

ENGINEERING, IRON, AND STEEL.

FEBRUARY 15.—**Barrow-in-Furness.**—STEEL FLOOR PLATES.—The Corporation invite tenders for the supply of about seventy (chequered) steel floor plates, 6 ft. by 3 ft. by ¼ in. Further particulars may be obtained from the Manager, Gas Works.

FEBRUARY 15.—**Liversedge and Gomersal.**—BRIDGE.—The West Riding Highways Committee invite tenders for the rebuilding in steel girders, concrete, and masonry of Rawfolds Bridge, situate on the Leeds and Whitehall (branch) main road, within the urban districts of Liversedge and Gomersal, over Spen Beck. Plans may be seen, and specification, etc., obtained, at the office of Mr. F. G. Carpenter, West Riding Surveyor, County Hall, Wakefield, on payment of a deposit of 1*l.* Cheques, etc., should be forwarded, and made payable, to the "West Riding Treasurer," at the County Hall, Wakefield.

FEBRUARY 17.—**Paddington.**—WASHING MACHINE.—The Guardians invite tenders for the supply and fixing of a washing machine at their infirmary, 285, Harrow-road, W. Copies of the specification may be obtained of Mr. Henry S. Aveling, Clerk to the Guardians, Guardians Offices, 313-319, Harrow-road, W.

FEBRUARY 19.—**Cardiff.**—MOTOR ALTERNATORS.—Cardiff Corporation invite tenders for the supply, delivery, and erection at their generating station of the following:—2—300 K.W. motor alternators. Specifications, etc., may be obtained from Mr Arthur Ellis, City Electrical Engineer and Manager, Central Offices, the Hayes, Cardiff, on payment of a deposit fee of 1*l.* 1s.

FEBRUARY 19.—**Chelmsford.**—ELECTRIC FIRE-ALARM SYSTEM.—The T.C. invite tenders for the maintenance and repair of their electric fire-alarm system. Particulars and forms of tender may be obtained at office of Mr. W. Smith, Town Clerk, Municipal Offices, 16, London-road, Chelmsford.

FEBRUARY 22.—**Lincoln.**—ELECTRICAL COMMUNICATION, INSTRUMENTS, AND LINES.—The Lincoln Corporation invite tenders for the construction and maintenance of a complete water level recording and telephonic system connecting their Waterworks Engineer's office with their proposed Elkesley Pumping Station and Bracebridge Service Reservoir and Westgate Water Tower. Specification, etc., may be obtained, and drawings inspected, at the office of the Engineer, Mr. Neil McK. Barron, Waterworks Engineer, Lincoln, upon production of a receipt from the City Accountant for the sum of 5*l.* 5s.

FEBRUARY 23.—**London.**—GIRDERS.—Great Western Railway Directors invite tenders for the supply of about 240 tons of steel bridge girders and other iron and steel work of British manufacture. Plans, etc., may be seen, and forms of tender obtained, at the office of the Engineer at Paddington Station, London.

FEBRUARY 23.—**North Shields.**—RETAINING WALL.—Tenders are invited for the erection of a cement concrete retaining wall of about 150 ft. in length and 20 ft. in height, in Bell-street, North Shields. Drawings may be seen, and upon payment of 2*l.* 2s. copies of bills of quantities, etc., obtained at the office of Mr. John F. Smillie, Borough Surveyor, Tynemouth. Alternative tenders for constructing the retaining wall in reinforced concrete in accordance with the design, etc., which may be seen at the said office, or to the contractor's own designs.

FEBRUARY 24.—**Belfast.**—CAPSTANS.—The Belfast Harbour Commissioners invite tenders for the designing, etc., of five double-geared hydraulic capstans (three 30-ton capstans and two 40-ton capstans) for the new graving dock now being constructed at Belfast. Outline specification, etc., may be obtained from the Harbour Engineer, Mr. W. Redfern Kelly, M.Inst.C.E.

FEBRUARY 26.—**Notteswell.**—BRIDGE WIDENING.—Essex C.C. Highways, Bridges, and Buildings Committee invite tenders for widening a small bridge (known as Burnt Mill Bridge) over the Mill Stream in the Parish of Notteswell. Plans to be seen, and specification, etc., obtained, at the Chief Surveyor's Office, Chelmsford.

MARCH 3.—**Esher.**—ELECTRIC LIGHTING.—The U.D.C. of Esher and the Dittons invite tenders for the wiring of the buildings and the installation of a system of electric lighting at its sewage disposal works, Lower Green, Esher. Specification to be seen at the Surveyor's office.

MARCH 4.—**Ackergill Station, Caithness-shire, N.B.**—CONSTRUCTION OF A REINFORCED CONCRETE SLIPWAY, ETC.—The Committee of Management of the Royal National Lifeboat Institution invite tenders for the construction of a reinforced concrete slipway at Ackergill, near Wick. Plans, etc., may be inspected on application to Mr. G. Jamieson, at Wick, or at the office of the Engineer and Architect to the Royal National Lifeboat Institution, Mr. W. T. Douglass, M.Inst.C.E., 15, Victoria-street, Westminster. Copies of the bills of quantities, etc., may be obtained on application to the Engineer and Architect, accompanied by a deposit of 1*l.* Copies of certain of the plans will be supplied by the Engineer and Architect at a cost of 3s. 6d.

MARCH 4.—**North Ormesby.**—BOILER, ETC.—The North Ormesby Gas Company, Ltd., invite tenders for boiler engine, and exhauster (15,000 cubic ft. per hour), with all necessary connexions. Mr. T. Weatherly, Secretary, Gas Office, North Ormesby.

MISCELLANEOUS.

FEBRUARY 15.—**Kidsgrove.**—SCAVENGING, ETC.—The U.D.C. invite tenders for the removal of night soil and house refuse. For further particulars apply to Mr. Enoch Cotton, Inspector of Nuisances, Kidsgrove.

FEBRUARY 15.—**St. Andrews.**—STEAM-ROLLER.—The St. Andrews T.C. invite offers for the hire of a steam-roller and scarifier. Specification may be obtained on application to Mr. Wm. Watson, Burgh Surveyor.

FEBRUARY 16.—**Chorlton.**—ELECTRIC MOTORS.—The Guardians of the Poor of the Chorlton Union invite tenders for the supply of three electric motors, to be delivered and fixed at the Workhouse, West Didsbury. Particulars may be obtained on application at offices of Mr. David S. Bloomfield, Clerk to the Guardians, Union Offices, All Saints', Manchester.

FEBRUARY 16.—**Plymouth.**—POLISHING.—Plymouth Guardians invite tenders for preparing and polishing the wood floors of the nurses' home and new infirmary. Full particulars may be obtained upon application to the Master of the Workhouse.

FEBRUARY 17.—**Accrington.**—TILING.—Tenders are invited for tiling required in Woodnook Council School, Accrington. Plans may be seen, and specifications obtained, at the office of Messrs. Fairhurst & Holt, architects, 21, Spring-gardens, Manchester.

FEBRUARY 17.—**Halifax.**—STEAM ROLLING, ETC.—Halifax R.D.C. invite tenders for the steam rolling and scarifying required on their highways. Form of tender may be obtained from Mr. F. Gordon, Surveyor, Clifton, Brighouse.

FEBRUARY 17.—**Hoddesdon.**—STREET WATERING.—The U.D.C. invite tenders for watering the streets of Hoddesdon. A specification of the work can be seen, and forms of tender obtained, at the office of the Surveyor, Mr. W. H. Flood, High-street, Hoddesdon.

FEBRUARY 17.—**Spilsby.**—TEAM LABOUR.—Spilsby R.D.C. invite tenders for leading materials. Forms of tender may be had on application to the District Highway Surveyor or to the sub-surveyors of the several parishes in the Rural District.

FEBRUARY 17.—**Tynemouth.**—CARTAGE.—The R.D.C. invite tenders for team labour. Specification, etc., may be obtained from Mr. John Waters, Long Benton, Newcastle-on-Tyne.

FEBRUARY 17.—**Willington, Tynemouth.**—SCAVENGING.—Tynemouth R.D.C. invite tenders for the removal and disposal of the house refuse, and for the cleansing and taking away the contents of earth-closets, etc. Specifications, etc., may be obtained on application to Mr. William Bean, Inspector of Nuisances, 3, South-view, Forest Hall, Newcastle-on-Tyne.

FEBRUARY 18.—**Bradford.**—PALISADING.—The Bradford Corporation invite tenders for the supply and erection of about 190 lineal yds. of wrought-iron palisading at Victoria Park, Oakenshaw. Drawings, etc., may be seen, and bills of quantities, etc., obtained, on application to the City Engineer and Surveyor, Town Hall, Bradford.

FEBRUARY 18.—**Brixworth.**—HAULING.—Brixworth R.D.C. invite tenders for hauling materials during the year ending March 31, 1910. Tender forms can be obtained from Mr. Wykes, 5, Elysium-terrace, Northampton.

FEBRUARY 18.—**Dore.**—HAULING.—Dore R.D.C. invite tenders for hauling for the roads in their district. Forms of tender and particulars of the work can be obtained from the Surveyors, viz., Mr. J. Lewis, Ewias Harold; and Mr. P. Gwillim, Cwm Dulas, Pontrilas.

FEBRUARY 18.—**Leyton.**—SCAVENGING.—Leyton U.D.C. invite tenders for the collection of house refuse by the pail system from houses within their district. Forms of tender, etc., may be obtained of Mr. William Dawson, M.Inst.C.E., the Council's Surveyor, Town Hall, Leyton.

FEBRUARY 19.—**Chelmsford.**—REMOVAL OF HOUSE REFUSE.—The R.D.C. of Chelmsford invite tenders for the removal of house refuse in a portion of the parish of Great Baddow. Also for the removal of house refuse in a portion of the parish of Widford. Particulars may be obtained from Mr. William Edser, Sanitary Inspector, Bank-chambers, Chelmsford.

FEBRUARY 19.—**Hoddesdon.**—HOUSE SCAVENGING.—The U.D.C. invite tenders for providing horses for their dust-carts, and men to accompany same. A specification of the work to be performed can be seen at the office of the Surveyor, Mr. W. Flood, High-street, Hoddesdon, from whom forms of tender can be obtained.

FEBRUARY 20.—**Great Ouseburn.**—CARTING.—Great Ouseburn R.D.C. invite tenders for carting stone and other materials, and also for supplying horse, cart, and man for day work. Forms of tender may be obtained from Mr. Charles Cawood, Whixley, Surveyor to the Council, or from Mr. F. S. Capes, Solicitor and Clerk to the Council, Boroughbridge.

* FEBRUARY 23.—**Willesden.**—REMOVAL OF HOUSE REFUSE.—The Willesden D.C. invite tenders for one or three years for removal and disposal of house refuse. See advertisement in this issue for further particulars.

FEBRUARY 24.—**Derby.**—TEAM LABOUR.—Derbyshire C.C. invite tenders for the supply of team labour. Forms of tender, etc., may be obtained at office of Mr. J. W. Horton, County Surveyor, County Offices, St. Mary's-gate, Derby.

FEBRUARY 24.—**Litherland.**—HORSES, CARTS, ETC.—Litherland U.D.C. invite tenders for the supply of the necessary horses, carts, and drivers for the removal of the ashpit, offal, and shop refuse in the Council's District. Specification, etc., can be obtained on application to Mr. A. H. Carter, Surveyor, Public Offices, Sefton-road, Litherland, on payment of the sum of 10s. 6d.

FEBRUARY 24.—**Worcester.**—NOTICE BOARDS.—Worcestershire C.C. General Purposes Committee invite tenders for providing and fixing notice boards in various parts of the county. Names to Mr. A. B. Rowe, County Architect, 30, Foregate-street, Worcester.

MARCH 1.—**Edinburgh.**—CONVEYING ROAD MATERIALS.—Midlothian C.C. invite estimates for conveying road materials within the four districts of the county for the year 1909-1910. Schedules of quantities may be obtained at the Road Office, County Buildings, Edinburgh, or from the District Road Surveyors.

MARCH 2.—**Beddington.**—SCAVENGING, ETC.—The Beddington Parochial Committee invite tenders (1) for the weekly collection and removal of house and garden refuse; (2) for the supply of horses and carmen for street watering. Forms of tender, etc., may be obtained at the offices of the Croydon R.D.C., Town Hall, Croydon.

MARCH 4.—**Wallington.**—SCAVENGING, ETC.—The Wallington Parochial Committee invite tenders for the weekly collection and removal of house and garden refuse, and for the supply of horses and carmen for street watering. Forms of tender, etc., may be obtained at the offices of the R.D.C., Town Hall, Croydon.

NO DATE.—**Batley.**—ASPHALTING.—The Corporation invite tenders for asphalting at the cemetery. Specifications may be seen, and particulars obtained from Mr. W. H. Atkinson, Registrar, Cemetery Lodge, Batley.

NO DATE.—**Batley.**—SOIL LEADING.—Batley Corporation invite tenders for leading the surplus soil at the cemetery. Particulars can be obtained from the Registrar at the cemetery.

PAINTING, etc.

FEBRUARY 15.—**Glasgow.**—PAINTING.—The Corporation invite offers for painting King's Bridge and Polmadie Bridge. Specifications, etc., may be had on application at the Office of Public Works, City-chambers, 64, Cochrane-street.

FEBRUARY 15.—**Halifax.**—PAINTING.—The Waterworks Committee of the Halifax Corporation invite tenders for the inside and outside painting work required at Woodside Baths. Forms of tender, etc.,

may be obtained on application to Mr. R. J. Hartley, A.M.Inst.C.E., Waterworks Engineer, Waterworks Office, Gibbet-street, Halifax, upon payment of the sum of 1*l.*

FEBRUARY 15.—**Preston.**—PAINTING.—The Corporation invite tenders for the painting, etc., required to be done at the baths, Saul-street. Specification may be seen, and form of tender, etc., obtained, at the office of the Borough Surveyor, Town Hall, Preston, on payment of 10s.

FEBRUARY 16.—**Leeds.**—PAINTING.—Painting, etc., to be done at the laundry and section 2 of the Union Workhouse, Beckett-street, Leeds. Specifications, etc., may be obtained on application to Mr. James H. Ford, Clerk to the Guardians, Poor Law Offices, South-parade, Leeds.

FEBRUARY 17.—**Leeds.**—PAINTING.—Leeds Corporation invite tenders for the painting, etc., of property in Ark-street, Grand-street, etc. The specification may be seen, and forms of tender obtained, at the office of Mr. W. T. Lancashire, City Engineer, in the Municipal Buildings.

FEBRUARY 17. — **Manchester.** — PAINTING.—The Parks Committee invite tenders for painting the exterior of the tea-room at Heaton Park. Specifications may be obtained at the office of the City Architect, Town Hall.

ROADS, SANITARY, AND WATER WORKS.

FEBRUARY 15.—**Caerphilly.**—STREET WORKS.—The U.D.C. invite tenders for paving, kerbing, channelling, flagging, sewering, forming, metalling, etc., Moy-road, Taff's Well. Plans, etc., may be seen, and forms of tender obtained, at the Surveyor's Office, Cardiff-road, Caerphilly, upon depositing the sum of 1*l.* 1s.

FEBRUARY 15. — **Hale.** — MAKING-UP.—Hale U.D.C. invite tenders for the making-up of Muricston-road, Harrop-road (portion), Cecil-road (portion) and Lindop-road (portion), Hale. Plans, etc., can be seen, and bills of quantities, etc., obtained, on the payment of a deposit of 1*l.* 1s., at the office of the Council's Surveyor, Mr. S. A. Pickering.

FEBRUARY 15.—**Hale.**—STREET IMPROVEMENT.—Hale U.D.C. invite tenders for certain works of street improvement to be carried out in Broomfield-lane, Hale. Plans, etc., can be seen, and bills of quantities, etc., obtained, on the payment of a deposit of 1*l.* 1s., at the office of the Council's Surveyor, Mr. S. A. Pickering.

FEBRUARY 15.—**Salterhebble.**—CONTACT BEDS.—The Highways Committee of the Halifax Corporation invite tenders for the construction of three pairs of contact beds at Salterhebble. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax, upon payment of the sum of 10*l.* for contract No. 14, 5*l.* for each of contracts Nos. 15 and 16, and 1*l.* for contract No. 17.

FEBRUARY 16.—**Acton.**—SEWERWORK.—Acton U.D.C. invite tenders for diverting the existing west boundary watercourse and laying about 2,200 ft. of 2-ft. reinforced concrete tubes. Plans, etc., can be seen, and bills of quantities obtained, of the surveyor, 57, High-street, Acton, during office hours.

FEBRUARY 16. — **Thurnscoe.** — FOOTPATH. — The U.D.C. of Thurnscoe invite tenders for flagging about 430 super. yds. of footpath, and the laying of about 230 lin. yds. of edging to same; also taking up and relaying surface drain in connexion therewith. Specification and any other particulars may be seen at the Council Offices, Thurnscoe, near Rotherham, on application to Mr. R. Higginbottom, Surveyor to the Council.

FEBRUARY 17. — **Gorseinon.** — CULVERT.—Swansea R.D.C. invite tenders for the construction of a culvert about 29 yds. long at West-street Gorseinon. Plans, etc., may be inspected at the offices of Mr. G. Powell Thomas, Highway Surveyor, Station-road, Fforestfach.

✱ FEBRUARY 17.—**Hammersmith.**—PAVING, ETC.—The Hammersmith B.C. invite tenders for making-up and paving certain roads in the Borough. See advertisement in this issue for further particulars.

FEBRUARY 17.—**Kingston-upon-Thames.**—SLUDGE PRESSES.—The Corporation invite tenders for supplying and fixing five sludge presses at the Corporation sewage works, Down Hall-road. Particulars can be obtained on application to Mr. R. Hampton Clucas, Borough Surveyor, at the Municipal Offices.

FEBRUARY 17. — **Milnsbridge.** — SEWERING, ETC., STREETS.—Making and sewering about 300 yds. of front streets, together with back streets, off Manchester-road, Milnsbridge. Plans, etc., may be seen, and quantities obtained, at office of Messrs. C. F. Mallinson & Son, surveyors, etc., Market-place, Huddersfield.

FEBRUARY 17.—**South Shields.**—CONCRETE WORKS.—The Corporation invite tenders for providing and laying in situ concrete to footways and back streets in the Borough, for twelve months. Specification, forms of tender, etc., can be obtained at the office of Mr. S. E. Burgess, M.Inst.C.E., Borough Engineer and Surveyor, Chapter-row, South Shields.

FEBRUARY 17.—**Surbiton.**—STREET WORKS.—The U.D.C. of Surbiton invite tenders for street improvement works at Clay-lane, Surbiton. The drawings, etc., can be seen at office of Mr. Henry T. Mather, Engineer and Surveyor, Council Offices, Surbiton, and a copy of the specifications obtained any day between the hours of 10 a.m. and 1 p.m. A deposit of 1*l.* 1s. must be made.

FEBRUARY 17. — **Wortley.** — CARRIAGE DRIVE.—The Upper and Lower Wortley Burial Board invite tenders for remaking the carriage drive leading from Oldfield-lane to their cemetery. Particulars may be obtained from the Clerk at the lodge.

FEBRUARY 18. — **Merthyr.** — SEWER.—The Merthyr and Aberdare Farm's Management Committee invite tenders for the construction of about 1,000 lineal yds. of 12-in. sewer at Parknewydd Farm. Plan, etc., may be seen at the Engineer's Office, Town Hall, Aberdare.

FEBRUARY 18.—**Tunbridge Wells.**—PRIVATE STREET WORKS.—The Council of the borough invite tenders for the paving, metalling, and making-up of parts of Holmewood and Woodland roads. Plans, etc., can be seen, and copies of the bill of quantities can be obtained, at the office of the Borough Engineer and Surveyor, Mr. W. H. Maxwell, A.M.Inst.C.E., Town Hall, Tunbridge Wells.

FEBRUARY 19. — **Bacup.** — SEWAGE CONDUIT. — The Corporation invite tenders for the whole of the works required in the construction of a sewage conduit in Rochdale-road. Plans, etc., may be seen, and specifications, etc., obtained, on application to the Borough Engineer, Bacup. A deposit of 10s. 6d. must be paid for the quantities.

FEBRUARY 19. — **Lhanbryd.** — WATER SUPPLY. — Estimates are wanted for the works in connexion with introducing a water supply to the special water supply district of Lhanbryd, for the C.C. of Elginshire. Plans, etc., may be seen with, and schedules of quantities obtained from, Mr. Charles C. Doig, C.E., Elgin.

FEBRUARY 20.—**Ayr.**—REPAIRING ROADS.—Ayr District Committee invite tenders to supply or cart and break best whinstone for repairing roads in the district of Ayr from the various quarries and railway-stations, all as specified in schedules which can be obtained from, and other particulars given by, Mr. Allan Stevenson, Road Surveyor, 14, Cathcart-street, Ayr.

FEBRUARY 20. — **Clewer Without, Windsor.** — MAKING-UP.—Windsor R.D.C. invite tenders for the making-up of the York-road, situate in the parish of Clewer Without. A plan and specification of the proposed works may be seen at office of Mr. J. E. Gale, Clerk, 3, Sheet-street, Windsor.

FEBRUARY 20. — **Hamilton.**—TANKS.—The District Committee of the Middle Ward of the County of Lanark invite tenders for providing, delivering, and erecting pressure reducing tanks, two sand washing boxes, and filter draw-off chamber. Specifications, etc., may be obtained at the office of the Water Superintendent, Mr. W. L. Balmer, District Offices, Hamilton.

FEBRUARY 20.—**Reigate.**—PRIVATE STREET WORKS.—The T.C. of Reigate invite tenders for the execution of private street improvements in Springcopse, Cornfield, Belmont, and Furzefield roads, and Furzefield-crescent. Plans, etc., prepared by Mr. Fred. T. Clayton, C.E., the Borough Surveyor. Bills of quantities, etc., may be obtained on application to the Borough Surveyor, at his office, at the Municipal Buildings, Reigate, where the said plans may also be inspected.

✱ FEBRUARY 22. — **Hendon.**—ROADS AND SEWERS.—The Hendon U.D.C. invite tenders for road, sewer, and paving works. See advertisement in this issue for further particulars.

FEBRUARY 22. — **Horwich.** — STREET WORKS. — Horwich U.D.C. invite tenders for sewering, levelling, paving, flagging, etc., of a number of streets, in accordance with plans, etc., prepared by Mr. Thomas Green, the Council's Surveyor. Bills of quantities, etc., can be obtained on payment of a deposit of 1*l.* 1s.

FEBRUARY 22. — **Inverness.** — CLACHNAHARRY DRAINAGE.—The T.C. invite tenders for the supplying and laying of about 363 lin. yds. of 18-in. cast-iron and about 570 lin. yds. of fireclay pipes. Also for the building of manholes, lampholes, street gullies, etc. Plans may be seen, and specifications, etc., obtained, at the office of Mr. T. H. Scott, C.E., M.R.San.I., Burgh Surveyor, Town House, Inverness, on payment of 1*l.* 1s.

FEBRUARY 22.—**Lincoln.**—ROAD, ETC.—The Lincoln Corporation invite tenders for the construction of an approach road to their proposed Elkesley Pumping Station, some two and a half miles from Checkerhouse (G.C.) Railway Station, Notts. Specification, etc., may be obtained, and drawing inspected, at the office of the Engineer, Mr. Neil McK. Barron, Waterworks Engineer, Lincoln, upon production of a receipt from the Borough Accountant for the sum of 5*l.*, 5s.

FEBRUARY 23.—**Cheshunt.**—ADDITIONS TO SEWAGE DISPOSAL WORKS.—The U.D.C. of Cheshunt invite tenders for additions to their sewage disposal works situate in the Parish of Enfield, County of Middlesex. Drawings, etc., may be seen at the office of the Engineers, Messrs. Pollard & Tingle, 31, Old Queen-street, Westminster, and at the Office of the Council. Form of tender can be obtained only from the Clerk to the Council, upon deposit of 1*l.* 1s. Bills of quantities can be obtained only from the Engineers upon production of the form of tender.

FEBRUARY 24.—**Hornsey.**—ROADS, ETC.—The T.C. invite tenders for sewering, levelling, paving, metalling, kerbing, channelling, and making good Hillside-gardens, Highgate. Forms of tender, etc., can be obtained from Mr. E. J. Lovegrove, Borough Engineer and Surveyor, Municipal Offices, No. 99, Southwood-lane, Highgate.

FEBRUARY 25.—**Ipsley, Redditch.**—SEWAGE DISPOSAL WORKS.—Redditch U.D.C. invite tenders for the construction of liquefying tanks, screening chambers, and bacterial filters at their outfall works, in the parish of Ipsley. Plans, etc., can be examined, and bill of quantities obtained, from Mr. Arthur J. Dickinson, Engineer and Surveyor, Council Offices, Redditch, upon payment of 1*l.* 1s.

FEBRUARY 26. — **Brighouse.** — ASPHALTING. — West Riding C.C. (Hipperholme District Subcommittee) invite tenders for ashphalting work in connexion with the playground, Bailiffe Bridge Provided School, near Brighouse. Specifications and particulars from Mr. J. H. Thorpe, Education Offices, Town Hall Buildings, Elland.

FEBRUARY 27.—**Belford.**—ROAD WORKS.—The R.D.C. of Belford invite tenders for quarrying, breaking, carting, and laying on materials, and for carting soil and road scrapings on the several groups of highways. Forms of tender, etc., may be obtained on application to the District Surveyor, Mr. C. A. Lake, Warenford, Chathill.

MARCH 4. — **Staverton.** — SEWERAGE. — Daventry R.D.C. invite tenders for constructing sewage-outfall works and laying sewers in the Parish of Staverton. Plans may be seen, and specification, etc., obtained, on application to the Engineer to the Council, Mr. J. B. Williams, The Moot Hall, Daventry, upon payment of 2*l.* 2s.

MARCH 10.—**Lichfield.**—STREET WORKS.—Lichfield R.D.C. invite tenders for carrying out private street works and laying storm-water drains in streets at Chase Terrace. Plans and specifications, prepared by Mr. C. O. Rawstron, District Surveyor, Lichfield, may be inspected, and general conditions seen, on application to Mr. Rawstron, from whom forms of tender, etc., may be obtained on payment of 2*l.* 2s.

NO DATE.—**Bournemouth.**—ROADS AND SEWERS.—For making roads and sewers on Talbot Woods Estate, Bournemouth. Plans can be seen, and particulars obtained, on application to Messrs. H. E. Hawker & Mitchell, surveyors, St. Peter's-chambers, Bournemouth.

NO DATE.—**Staughton Estate, Huntingdonshire.**—DRAINAGE.—Tenders are invited for the under-drainage of about 28 acres of land, being part of the Manor Farm, Great Staughton, Huntingdonshire. Plans, etc., can be obtained upon application to the Crown Receivers, Messrs. J. Carter Jonas & Sons, Cambridge, and 8A, Whitehall-place, London, S.W.

STONES, MATERIAL, AND STORES.

FEBRUARY 15.—**Antrim.**—SUPPLIES.—The Asylum Committee invite tenders for supplying the institution with stores. Official forms to be had from the Clerk of the Asylum, Holywell, Antrim.

FEBRUARY 15. — **Birmingham.** — SLACK, IRON AND STEEL WARE, BELTING, TIMBER, BRUSHES, DRYSALTERY, AND MISCELLANEOUS STORES.—The Interception Subcommittee invite tenders for supplying and delivering the above-mentioned materials for one year. Samples of the materials may be inspected at Montague-street Wharf, where also any information can be obtained.

FEBRUARY 15.—**Beverley.**—STONE.—Beverley D.C., Yorks (Highways Committee), invite tenders for the supply of about 3,000 to 4,000 tons of stone for macadamising their roads. Particulars, etc., may be obtained on application to Mr. E. Picker, C.E., Surveyor, Beverley.

FEBRUARY 15.—**Macclesfield.**—ARTICLES.—Tenders are invited for the supply of articles for the year ending March 31, 1910. Forms of tender may be had on application to the Assistant Clerk, at the Union Offices, Macclesfield.

FEBRUARY 15. — **Middleton Cheney.** — HARTSHILL STONES, GRANITE, AND SLAG.—The R.D.C. invite tenders for the supply of best Hartshill or other granite. Specifications, etc., may be obtained of Mr. William J. Treadwell, District Surveyor, Middleton Cheney, Banbury.

FEBRUARY 15. — **St. Andrews.** — WHINSTONE.—The St. Andrews T.C. invite tenders for the supply of 1,500 tons or thereby whinstone metal. Specification, etc., may be obtained on application to the Burgh Surveyor.

FEBRUARY 15. — **St. Marylebone.** — TIMBER.—The Council of the Metropolitan Borough of St. Marylebone invite tenders for the supply and delivery of about 883,000 3 in. by 5 in. by 9 in. best Swedish yellow deal creosoted paving blocks; also for the supply and delivery of various sizes of best plain and creosoted yellow deal blocks and Jarrah wood blocks for repairs. Forms of tender may be obtained on application at the Town Hall, Marylebone-lane, Oxford-street, W., and any further particulars may be had of the Borough Surveyor, Mr. J. Paget Waddington, M.Inst.C.E.

FEBRUARY 15. — **Salford.** — ANNUAL CONTRACTS FOR SUPPLY OF STORES, ETC.—Tenders are invited for materials. Specifications, etc., may be obtained from Mr. Victor A. H. M'Cowen, M.I.E.E., the Borough Electrical Engineer, Electricity Works, Frederick-road, Pendleton.

FEBRUARY 15.—**Selby.**—SLACK.—The Selby U.D.C. invite tenders for about 500 tons (at a price per ton) of good engine slack. Mr. Bruce McG. Gray, A.M.Inst.C.E., Town Hall, Selby.

FEBRUARY 15. — **Selby.** — WHINSTONE. — The Selby U.D.C. invite tenders for the supply of whinstone and dross. Mr. Bruce McG. Gray, A.M.Inst.C.E., Town Hall, Selby.

FEBRUARY 16. — **London.** — STORES. — The South Indian Railway Company, Ltd., invite tenders for the supply of (1) locomotive and engineering stores; (2) locomotive stores. Specifications, etc., may be obtained at the company's offices, 91, York-street, Westminster, S.W. A charge, which will not be returned, will be made of 10s. for each copy of specification Nos. 1 and 2.

FEBRUARY 16.—**Manchester.**—PIPES. — Manchester Corporation Tramways Committee invite tenders for the supply of cast-iron rubber-jointed pipes, etc., for heating purposes. Specifications and forms of tender may be obtained on application to Mr. J. M. M'Elroy, General Manager, Tramways Department, 55, Piccadilly, Manchester.

FEBRUARY 16. — **Staines.** — STONEWARE PIPES. — Staines U.D.C. invite tenders for stoneware pipes. Further particulars may be obtained of Mr. E. J. Barrett, A.M.Inst.C.E., Engineer, Town Hall, Staines.

FEBRUARY 16. — **Towcester.** — ROAD MATERIALS. — Towcester R.D.C. invite tenders for the supply of granite and slag. Forms of tender, etc., may be obtained on application to Mr. W. Sheppard, of Towcester, Surveyor to the Council.

FEBRUARY 17. — **Bacup.** — ANNUAL CONTRACTS.—The Corporation invite tenders for materials as required by the various departments during the year. Further particulars, etc., can be had on application at the Borough Surveyor's Office.

FEBRUARY 17.—**Bootle.**—MATERIALS AND STORES.—The Corporation of Bootle invite tenders for the supply of stores and materials and the execution of repairs. Forms of tender may be obtained at the Borough Engineer's Office, Town Hall, and samples inspected at the Town Hall yard.

FEBRUARY 17.—**Burton-upon-Trent.**—MATERIALS.—Burton-upon-Trent U.D.C. invite tenders for the supply of materials, goods, tools, etc., for six or twelve months. Forms of tender may be had on application at the Borough Surveyor's Office, and

samples may be inspected at the Bond End Stores on application to the Storekeeper.

FEBRUARY 17.—**Dundee.**—STEEL BRIDGE RAILS.—The Trustees of the Harbour of Dundee invite offers for 100 tons of either new perfect or new slightly defective steel bridge rails, about 70 lb. per yard, according to specification and section, which may be obtained at the office of Mr. J. Hannay Thompson, M.Inst.C.E., Harbour Engineer, Harbour Engineer's Office, Dundee.

FEBRUARY 17.—**Huddersfield.**—STORES.—The Gas Committee of the Corporation of Huddersfield invite tenders for stores and materials. Forms of tender and conditions may be obtained on application to the Engineer of the Gas Department, Mr. Edward A. Harman, M.Inst.C.E.

FEBRUARY 17.—**Mutford, etc.**—ROAD MATERIALS.—The R.D.C. of Mutford and Lothingland invite tenders for the supply of granite, flint, gravel, silt, path shingle, etc. Forms of tender, etc., can be obtained of the Council's Surveyor, Mr. S. G. Bloy, Oulton Broad, Lowestoft.

FEBRUARY 17.—**Norwich.**—MATERIALS.—Tenders are invited for the supply of materials and work for one year. The necessary forms of tender, specifications, etc., may be obtained at office of Mr. Arthur E. Collins, M.Inst.C.E., City Engineer, etc., Guildhall, Norwich.

FEBRUARY 17. — **Rawtenstall.** — MATERIALS AND LABOUR.—The Corporation invite tenders for the supply during the twelve months ending March 25, 1910, of road metal, earthenware pipes and gullies, timber, pitch and creosote oil, etc. Forms of tender can be obtained on application to the Borough Surveyor, Municipal Offices, Rawtenstall.

FEBRUARY 17. — **Turton.** — TEAM LABOUR AND MATERIALS.—The U.D.C. invite tenders for team labour, materials, and stores. Further particulars and forms of tender may be obtained from the Surveyor, at the Council Offices, Bromley Cross, near Bolton.

FEBRUARY 17.—**Tynemouth.**—ROAD MATERIAL.—Tynemouth R.D.C. invite tenders for the supply of whinstone and limestone road metal. Specification, bills of quantities and forms of tender may be obtained from Mr. John Waters, District Surveyor, Long Benton, Newcastle-on-Tyne.

FEBRUARY 17. — **Wisbech.** — GRANITE, IRONSTONE, SLAG, GRAVEL, RAGSTONE, AND CLUNCH.—The Wisbech R.D.C. invite tenders for the supply of road material. Forms of tender for both the North and South Districts may be obtained on application to the Highway Surveyor for the North District, Mr. A. G. Catling, 4, Post Office-lane, Wisbech.

FEBRUARY 17.—**Worksop.**—SLAG.—The U.D.C. invite tenders for supply of 2,000 tons of slag. Forms of tender can be obtained on sending stamped addressed envelope to Mr. Geo. H. Featherston, Clerk, Town Hall, Worksop.

FEBRUARY 18.—**Aston Manor.**—STORES CONTRACTS.—The Public Works Subcommittee invite tenders for materials and stores. Forms of tender, etc., may be obtained at office of Mr. F. W. Richardson, Borough Surveyor, Council House, Aston Manor, during office hours.

FEBRUARY 18.—**Cardiff.**—STORES, ETC.—The Waterworks Committee invite tenders for (1) stores from firms in Cardiff; (2) street surface covers; (3) jobbing masons' work. Specifications may be seen, and forms of tender obtained, on application to the offices of Mr. C. H. Priestley, M.Inst.C.E., Waterworks Engineer, City Hall, Cardiff.

FEBRUARY 18.—**Newport (Mon.).**—ANNUAL CONTRACTS.—The Corporation of Newport invite tenders for work and materials. Forms may be obtained at the Borough Engineer's Office.

FEBRUARY 18.—**Southampton.**—GOODS.—Southampton Harbour Board invite tenders from local firms for work and supply of goods. Schedules and forms of tender may be obtained at the offices of the Board, Town Quay, Southampton.

FEBRUARY 19. — **Caistor.** — GRANITE AND SLAG.—Caistor R.D.C. invite tenders for the supply of about 7,000 tons of granite and about 1,600 tons of slag. Forms of tender, etc., may be obtained on application to Mr. A. A. Padley, Clerk to the Council, Council Offices, Caistor, Lincs.

FEBRUARY 20. — **Cosford.** — MATERIALS. — Cosford R.D.C. invite tenders for the supply of pit stones for the repair of the highways. Forms of tender, etc., may be obtained on application at the offices of the Council, at Hadleigh.

FEBRUARY 20.—**Headington.**—SUPPLY OF HARTSHILL OR OTHER APPROVED STONES, AND CARTING OF SAME.—Particulars of places and quantity can be obtained from the District Surveyor, Mr. J. C. Coates, Hartfield Cottage, New Headington.

FEBRUARY 20.—**Maidstone.**—ROAD MATERIAL, ETC.—The R.D.C. invite tenders for supply and delivery of road material, team labour, etc. Forms of tender, etc., to be had from Mr. Robert Hoar, Clerk, 9, King-street, Maidstone.

FEBRUARY 20.—**Northampton.**—MATERIALS.—The Corporation of Northampton invite tenders for the supply of materials for a period of twelve months. Specifications, etc., may be obtained on application to Mr. Alfred Fidler, M.Inst.C.E., Borough Engineer.

FEBRUARY 20.—**Rathmines and Rathgar.**—SUPPLIES.—The Rathmines and Rathgar U.D.C. invite tenders for the supply of articles. Official form can be obtained at the Surveyor's Office.

FEBRUARY 20.—**Sheffield.**—ANNUAL CONTRACTS, 1909-10.—The Highway and Sewerage Committee of the City Council invite tenders for labour and materials for the year ending March 25, 1910. Particulars, etc., may be obtained, and samples of materials and workmanship inspected, at the offices of the City Engineer and Surveyor, Town Hall, Sheffield, on payment of the sum of 10s.

FEBRUARY 20.—**Sibsey.**—GRANITE AND SLAG.—Sibsey R.D.C. invite tenders for the supply of from 1,200 to 1,500 tons of broken X and XX granite. Also for the supply of from 1,000 to 1,200 tons of broken X and XX slag. Forms to be obtained on application to Mr. John M. Simpson, Clerk to the Council, Boston.

FEBRUARY 20.—**Witney.**—ROAD MATERIALS.—The R.D.C. of Witney invite tenders for the supply of the best selected Hartshill and Leicestershire granites, Clee Hill, Rowley Regis, and Mendip stones. Further particulars may be obtained from Mr. George Wallis (Surveyor of the East District), Bampton, R.S.O., Oxon, and Mr. D. H. W. Powell (Surveyor of the West District), Brizenorton, Bampton, Oxon.

FEBRUARY 22.—**East Grinstead.**—ROAD MATERIALS.—The R.D.C. of East Grinstead invite tenders for the supply of materials. Forms of tender will be sent to any person desiring to tender on receipt by Mr. Francis S. White, Clerk to the Council, East Grinstead, of a stamped addressed foolscap envelope.

FEBRUARY 22.—**Hemel Hempsted.**—ANNUAL CONTRACTS.—Supply of requisites for the year ending March 31, 1910. Mr. Walter R. Locke, Borough Engineer and Surveyor, Town Hall, Hemel Hempsted.

* FEBRUARY 22. — **Hendon.** — MATERIALS. — The Hendon U.D.C. invite tenders for supply of various materials, etc., for one year. See advertisement in this issue for further particulars.

FEBRUARY 22.—**New Malden.**—SUPPLIES, ETC.—The Maldens and Coombe U.D.C. invite tenders for work and materials. Forms of tender, etc., will be furnished upon application by letter with stamped addressed foolscap envelope, or call between the hours of ten and five, at the Clerk's Department, Council Offices, New Malden, and after payment of a deposit of 1*l.* 1s. (cash or postal order only) for each form.

FEBRUARY 22. — **Penarth.** — ROAD METALLING.—Penarth U.D.C. invite tenders for the supply of road metalling and gravel. Forms of tender and further particulars may be obtained on application to Mr. Edgar I. Evans, A.M.Inst.C.E., Surveyor, D.C. Offices.

FEBRUARY 22.—**Southampton.**—STONE, ETC.—Tenders are required for the supply of stone for the repair of the main roads. Forms of tender, etc., may be obtained on application to Mr. W. J. Taylor, County Surveyor, The Castle, Winchester.

FEBRUARY 22.—**Sowerby Bridge.**—RETORTS, ETC.—The U.D.C. Gasworks Committee invite tenders for the supply, for the Sowerby Bridge and Luddenden Foot Gasworks, of retorts, firebricks, fireblocks, fireclay, etc. Forms, etc., can be obtained, with any further information, on application to Mr. A. W. Bissell, Engineer, Gasworks, Sowerby Bridge.

FEBRUARY 22.—**Wakefield.**—STORES.—Wanted, for the West Riding Lunatic Asylums at Menston, near Leeds; Storthes Hall, Kirkburton, near Huddersfield; Wadsley Bridge, near Sheffield; and Wakefield, surveyors' materials, lead, tin, iron, etc., for the half-year ending October 1, 1909. Forms of tender and other particulars may be obtained on application to the Clerk to Asylums Committee, Room No. 30, County Hall, Wakefield.

FEBRUARY 23.—**Belfast.**—STORES AND WORK.—The Works Committee invite tenders for the supply of stores and work for a year. Forms of tender and particulars may be obtained from the Superintendent of Works, City Hall.

FEBRUARY 23.—**Deptford.**—ANNUAL CONTRACTS.—The Council of the above borough invite tenders for the execution of works and the supply of materials for the year. Printed particulars, etc., can be obtained at the Town Hall, New Cross-road, S.E.

FEBRUARY 23.—**Doncaster.**—MATERIALS.—Tenders are required for the supply of dross and granite, with samples, for the whole or part of the roads for twelve months. Specifications, etc., may be obtained on applying to Mr. W. R. Crabtree, Highway Surveyor of the above Council, at the Union Offices, High-street, Doncaster.

FEBRUARY 23.—**Manchester.**—MATERIALS, STORES, ETC.—Manchester Corporation Tramways Committee invite tenders for general stores. Specifications, etc., may be obtained on application to Mr. J. M. McElroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester.

FEBRUARY 23.—**Merton.**—MATERIALS, ETC.—Merton U.D.C. invite tenders for work and materials. Applications for forms of tender must be made to Mr. C. J. Mountifield, Clerk of the Council, D.C. Offices, Kingston-road, Merton, Surrey, accompanied by a stamped addressed foolscap envelope.

FEBRUARY 23. — **Southall.** — ANNUAL CONTRACTS.—Southall Norwood U.D.C invite tenders for the supply of materials, etc. Forms of tender, etc., can be obtained from Mr. Reginald Brown, A.M.Inst.C.E. F.S.I., Engineer and Surveyor, Public Offices, Southall.

FEBRUARY 23.—**Woodford.**—WORKS AND SUPPLIES.—Woodford U.D.C. invite tenders for works and supplies from March 31, 1909, to March 31, 1910. Particulars, etc., may be obtained from Mr. William Farrington, Surveyor to the Council, Council Offices, Woodford Green.

FEBRUARY 23.—**York.**—ARTICLES.—The Corporation invite tenders for the supply of articles during the year ending March 31, 1910. Forms of tender will be supplied upon application to office of Mr. F. W. Spurr, City Engineer, Guildhall, York.

FEBRUARY 23.—**York.**—STORES.—The York Corporation invite tenders for the supply of general stores, road-making material, carting, etc. Forms of tender and all particulars will be supplied upon application to the City Engineer's Office.

FEBRUARY 24.—**Desborough.**—GRANITE AND LIMESTONE.—The U.D.C. of Desborough invite tenders for the supply of granite and limestone. Forms of tender may be obtained on application to Mr. G. E. Marlow, Surveyor, Council Offices, Desborough.

FEBRUARY 24.—**Hollingbourn.**—ROAD MATERIALS.—The R.D.C. invite tenders for the supply and delivery of road materials. Particulars and forms of tender on application to Mr. H. J. Bracher, Clerk to the Council, 33, Earl-street, Maidstone.

FEBRUARY 25.—**Croydon.**—MATERIALS, ETC.—Croydon R.D.C. invite tenders for broken granite, flints, tarpaving material, kerbing, pitching, and channelling, etc. Forms of tender, etc., can be obtained on application to Mr. Ernest John Gowen, Clerk of the Council, District Council Offices, Town Hall, Croydon, and samples of tools, etc., can be seen at the Vestry Hall, Mitcham, and any other particulars can be obtained by applying to the Surveyor, Town Hall, Croydon, or Vestry Hall, Mitcham.

FEBRUARY 25.—**Flaxton.**—ROAD MATERIALS.—Flaxton R.D.C. invite tenders for the supply of best blue whinstone, and also broken annealed and common slag. Mr. Joseph Peters, Clerk to the Council, 4, New-street, York.

FEBRUARY 25.—**Hackney.**—WORKS AND MATERIALS.—Hackney B.C. invite tenders for the execution of works and the supply and delivery of materials from April 1, 1909. Specifications, forms of tender, etc., may be obtained on application at the office of Mr. Norman Scorgie, M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Hackney, N.E., and on deposit, in each case, of a sum of 10s.

FEBRUARY 25.—**Islington.**—ANNUAL CONTRACTS.—The B.C. invite tenders for supply of materials, etc. Forms of tender, etc., may be obtained on application at the Town Hall, Upper-street, N.

FEBRUARY 25. — **Thakeham.** — ROAD MATERIAL (INCLUDING TAR) AND CARTAGE.—The R.D.C. invite tenders for the supply of road material for the repair of highways. Tenders are also invited for the supply of gas tar. Full particulars and forms of tender may be obtained from Mr. Wm. Forrester, Surveyor, Storrington, Sussex.

FEBRUARY 26. — **Walthamstow.** — ANNUAL CONTRACTS FOR STORES.—The U.D.C. invite tenders for the supply of stores. Further particulars, with form of tender, may be obtained from Mr. G. R. Spurr, A.M.Inst.M.E., Electrical and Tramways Engineer to the Council, Electricity Works, Priory-avenue, Walthamstow, by previously depositing in cash the sum of 1*l.* 1s. for each form.

FEBRUARY 26.—**Walthamstow.**—SUPPLIES, ETC.—The U.D.C invite tenders for the supply of materials. Forms of tender may be obtained on application at the office of the Medical Officer of Health, Town Hall Annexe, Walthamstow, by previously depositing in cash the sum of 1*l.* 1s.

FEBRUARY 27.—**Hereford.**—MATERIALS.—Tenders are invited for the supply of materials in accordance with the general conditions and specifications to be seen at the office of the City Surveyor.

FEBRUARY 27.—**Newton-in-Makerfield.**—SUPPLIES.—The U.D.C. invite tenders for the supply of materials for one year. Printed forms of tender may be obtained from the Stores Clerk, Gasworks, Earlestown.

MARCH 1. — **Claypole.** — ROAD MATERIALS. — The R.D.C. invite tenders for the supply of about 1,850 tons of granite and 2,300 tons of slag. Further particulars may be obtained upon application to the District Surveyor, Mr. F. C. Meyrick, Brant Broughton, Newark, upon receipt of a stamped and addressed foolscap envelope.

MARCH 1.—**Ealing.**—MATERIALS, ETC.—The T.C. of the Borough of Ealing invite tenders for the supply of materials. Printed forms of tender, etc., may be obtained on application to the Borough Surveyor, Mr. Charles Jones, M.Inst.C.E., at his office, Town Hall, Ealing, W.

MARCH 1.—**Sleaford.**—GRANITE AND SLAG.—Sleaford U.D.C. invite tenders for the supply of 1,000 tons of broken X and XX granite and 200 tons slag, at per ton. Printed forms of tender may be obtained on application to Mr. Edmund Clements, Clerk, Council Offices, Sleaford, by inclosing a fully stamped addressed foolscap envelope.

MARCH 1.—**Tenterden.**—MATERIALS.—The T.C. invite tenders for the supply of quartzite basalt or other approved macadam, and for mason's work in the Borough. Further particulars and forms of tender may be obtained of Mr. W. L. C. Turner, Borough Surveyor, Town Hall, Tenterden.

MARCH 1. — **Wangford.** — ROAD MATERIALS.—The R.D.C. invite tenders for materials (granite, flint, gravel, marl). Forms to be obtained from the Clerk, Mr. F. S. Rix, Beccles.

MARCH 2.—**Shoreditch.**—ANNUAL CONTRACTS.—The B.C. invite tenders for articles and works for one year. Samples of the articles required may be seen, and forms of tender obtained, at the Town Hall, Old-street, E.C.

MARCH 3.—**Goole.**—MATERIALS, ETC.—Goole U.D.C. Highways and Sewers Committee invite tenders for the supply of stores and materials. Forms of tender, etc., may be obtained by applying to Mr. C. G. Bradley, Engineer and Surveyor, Engineer and Surveyor's Office, Goole.

MARCH 5. — **Reading.** — STORES AND WORKS.—The Corporation of Reading invite tenders for the supply for a term of one year, ending March 31, 1910, of stores and works. Forms of tender on application at office of Mr. John Bowen, A.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading.

MARCH 6. — **Guildford.** — MATERIALS. — The T.C. invite tenders for the supply of materials for a period of twelve months. All particulars, etc., may be obtained on application to the Borough Engineer, Mr. C. G. Mason, A.M.Inst.C.E.

MARCH 8.—**Batley.**—MATERIALS.—The T.C. invite tenders for the supply of materials. Forms of specification, etc., may be obtained from the Borough Engineer, Mr. Oscar J. Kirby, at his office, Town Hall, Batley.

MARCH 10.—**Birmingham.**—STORES AND MATERIALS.—Birmingham Tame and Rea District Drainage Board invite tenders for the supply of stores and materials for one year. Samples and patterns may be inspected at the Board's Offices, Tyburn, near Birmingham (Castle Bromwich Station, Midland Railway). General conditions, etc., may be obtained at the above offices.

* NO DATE.—**Kingston-on-Thames.**—BRICK RUBBISH AND FLINTS.—The Guardians of the Kingston Union invite tenders for about 300 cubic yds. of brick rubbish, and also 200 yds. of brown Kentish flints broken to a 2-in. gauge. See advertisement in this issue for further particulars.

NO DATE.—**Yeadon.**—ROAD MATERIALS.—Yeadon U.D.C. invite tenders for the supply of the various materials required for the making and repairs of roads and footpaths. Forms of tender, etc., on application to Mr. N. Houlden, Surveyor to the Council, Town Hall, Yeadon.

Public Appointments.

Nature of Appointment.	By whom Advertised.	ary.	Application to be in
*CLERK OF WORKS	Staines U.D.C.	3l. 3s. per week	Feb. 16
*INSPECTOR OF BUILDINGS	King's Norton, etc., Ed. Com.	130l. per annum	Feb. 18
*TWO ROAD ENGINEERS, SOUTHERN NIGERIA	Crown Agents for Colonies ...	See advertisement in this issue	do
*ARCHITECTURAL AND GENERAL ASSISTANT	City of Carlisle	100l. per annum	Feb. 19
*BOROUGH ENGINEER AND SURVEYOR	South Shields Town Council	400l. per annum	Feb. 22
*CLERK-DRAUGHTSMAN	Hampstead Borough Council	100l. per annum	do.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*ELECTRIC PASSENGER LIFT, ETC.—6, Cornmarket-street, Oxford	R. Buckell & Son	Feb. 15
*FREEHOLD PROPERTIES, NACCOLT, KENT—At the Saracen's Head Hotel	Cobb	Feb. 16
*STK. & PLT. OF CONCRETE PAVING & PARTITION MANUF'Y.—28, Sugar House-la., E.	J. Hibbard & Sons	do.
*FREEHOLD SITES, GOLDER'S-GREEN, N.W.—At the Mart	Furbers	Feb. 17
*FREEHOLD BUSINESS PREMISES—Beaconsfield, Bucks	J. & B. Bolfe	March 3
*FREEHOLD LAND, NEW MALDEN—At the Mart	Chesterton & Sons	March 11

MISCELLANEOUS—*Continued from page 194.*

HEATING AND VENTILATION IN ELEMENTARY SCHOOLS.

The Board of Education is being urged to appoint a body of experts to make a thorough and conclusive inquiry into the question of the impurity of air in public elementary schools, and the best methods of heating and ventilation. It is urged that under existing conditions, the air space, etc., proper ventilation in schools is extremely difficult, and that while all schools, therefore, are more dangerous to health than even indifferently-arranged homes, the danger is much greater in the case of children under five years owing to their greater need of light and air. According to a report of the Board of Education, this view is based largely upon experiments made in Scotland some twenty years ago; but Dr. Haldane has lately drawn up a memorandum in which he states that when the experiments were originally made in the mechanically-ventilated schools, the apparatus then in use was very imperfect, and that in the naturally-ventilated rooms it is usual for all the windows to be on one side of the room so that there was no through draught of air. A certain number of English authorities have given attention to this subject, and endeavoured by making their own experiments to solve the question for themselves, and the results have been encouraging. For instance, in Blackburn an exhaustive examination was made of the general sanitary condition of the schools, and also a chemical analysis of the air in them for carbonic acid. The result was in favour of the view that it is not impracticable to secure a reasonable standard of atmospheric purity in all schools where a suitable system of ventilation and heating can be put in. The most recent experiments appear to show that those symptoms of school fatigue which were formerly ascribed to the effects of carbonic acid itself are really due to the conditions of temperature, relative humidity, and the presence of putrescible organic matter and of micro-organisms that carry infection. The fact that carbonic acid, while not in itself quite the danger that has been hitherto supposed, is produced concurrently with the real cause of danger, does not in any way lessen the need for good methods of ventilation. The opinion is expressed that the proper structure of any rooms or buildings used for the accommodation of young children is a subject that requires medical consideration. An inquiry as suggested should lead to improved methods of building and ventilating new schools; it would give local education authorities advice as to the improvement of existing buildings; and it would lead to a more intelligent use by teachers of the means of ventilation which are provided for them.

HOUSING IN BIRMINGHAM.

With the object of raising the standard of housing in the poorer parts of Birmingham, the Housing Committee have been considering the best method of using their powers under the Housing of the Working Classes Act, and they have issued a report, which contains points of interest to builders and owners of small house property. Owners are invited to consult with the Committee before undertaking work when alterations or repairs are insisted on, so as to avoid the risk of expenditure in a wrong direction, and they are supplied with specifications of the work required, although this is not stipulated by the Act. There is also an Interviewing Sub-Committee to which the owner may come if he is unable to arrive at an agreement with the officers of the department. The Committee state that their general principles of reform are as follows:—(1) Where houses are too close together, one or more houses shall be removed in order to let light and air into the remainder; (2) outhouses within a few feet of front doors and windows must be removed, and, if necessary, a house must be demolished to make room for new outhouses—compensation, however, is paid for the removal of such buildings; (3) they require one ashbin to every two houses, one washhouse to every four houses, and one water-closet to every two houses; (4) common courtyards must be paved, except where the gardens are kept tidy and wholesome. With regard to the houses themselves, the Committee make a number of important suggestions. They ask that when quarry floors have to be taken up the floor shall be relaid with concrete to prevent the damp rising into the house from underneath, and recommend also the insertion of damp courses, except when a house is evidently dry. All dirty wall-papers are to be removed no matter how many layers there may be, and insanitary brick sinks are to be done away with and earthenware sinks with water supply provided, so that the tenants may be able to wash without going to the yard tap. The windows are to be made to open bottom and top, and the woodwork of these and the doors are to be weatherproof. All filth found between floors and ceilings is to be removed, and matchboarding that hides damp or harbours filth is to share the same fate. Where fresh paint is required, two coats are to be put on. Ventilated food cupboards are to be provided to all houses, and cellars will be filled in where they are a cause of damp or bad smells. The Committee express the opinion that property owners should be asked to do all the repairs at the same time. The other method was tried before the present Committee was appointed, and resulted in the owners having to be constantly harassed by the Inspectors to do the next thing required.

ST. PAUL'S CHURCH, BRENTFORD.

A faculty has been granted by Dr. Tristram, K.C., Chancellor of the Diocese of London, to authorise the fitting up of a portion of the north aisle of the church with a holy-table and prayer and reading desks as a side chapel, for early and week-end services, in completion of a memorial to the late vicar. The church was built in 1867-9, after designs by F. & H. Francis, in the Early Gothic style, for 700 sittings; the population of the parish now amounts to about 6,000 persons.

CROSTHWAITE CHURCH, WESTMORELAND.

A faculty has been granted to form a baptistery on the site of the old vestry at the south-west corner of this church, near the main entrance, and to remove the old font there from its present inconvenient position. This font is of great historical interest, it being the memorial of a XIVth century vicar, Sir Thomas de Eshehead, who was appointed to Crosthwaite in 1362. The shields carved on the octagon represent (1) the word of God, from the mouth of the Almighty; (2) the emblem of the Trinity; (3) the Vine in Egypt; (4) the Lily of the Virgin Mary; (5) wild boar rooting up the Vine; (6) Royal arms of England and France; (7) the tree of life; (8) the emblems of the Passion.

JOHN-STREET, ST. JAMES'S-SQUARE.

It is proposed to change the name of this street—one of if not the shortest in London—by incorporating it with St. James's-square. John-street opens out of the south-east corner of the square into Pall Mall, and for postal purposes consists of but one house, which, we understand, is occupied by the agent of the Duke of Norfolk, whose town house adjoins it, in the square. Within the county of London there are, it seems, forty-five John or John's streets, and only ten less St. John or St. John's streets, whilst the London area for postal addresses can reckon more than 100 streets whereof John or St. John forms part of the street names. The London County Council Local Government Committee have directed the attention of borough councils to the matter. A suggestion has been made that—as in the case of John Carpenter-street—some degree of distinctiveness and originality might be introduced, and without touching the residents' susceptibilities, by adding to "John" a famous surname, such as, to cite a few that occur to us, Milton, Dryden, Opie, Constable, Leech, Millais, Keene, Tenniel, Churchill, Moore, of Gaunt, Howard, Hullah, Bull, Liston, Kemble, Stow, Strype, Bunyan, Wesley, Bright, Knox, Hampden, Denham, Donne, Locke, Gerarde, Thurloe, Tyndall, Selden, Aubrey, Hawkins, Gay, and so on.

CEMENT OUTPUT OF THE UNITED STATES.

The United States Geological Survey reports that the estimated production of Portland cement in that country during the year 1908 was somewhat less than 40,000,000 barrels. In the three preceding years the production was as follows:—1905, 35,246,812 barrels; 1906, 46,463,424 barrels; 1907, 48,785,390 barrels. The year 1909 opens with heavy stocks of cement on hand at most mills, but with good prospects for a steady, though slow, revival in the trade. It is considered unlikely, however, that this revival will be sufficiently rapid to push the mills to their full capacity during the year. The total maximum capacity of existing plants is now about 60,000,000 barrels a year.

Patents.

APPLICATIONS PUBLISHED.*

919 of 1908.—Frank Durrant: Fireplaces, grates, gas-stoves, and furnaces.

926 of 1908.—Eleanor Henderson: Domestic firegrates.

2,297 of 1908.—Friedrich Bundesen and Eugen Moell: Safety arrangement applicable to door locks.

3,863 of 1908.—Herbert Ernest Minge Hobbs: Manhole covers and frames therefor, and the like.

4,102 of 1908.—August Berndt: Glass tiles.

5,300 of 1908.—James Galloway: Flushing cisterns.

5,550 of 1908.—John Barr: Double ridge-board ventilator with an adjustable air outlet for roofs of cowsheds, stables, factories, workshops, and the like.

5,695 of 1908.—John Arthur Frailing: Apparatus for clearing or unstopping waste pipes, and particularly public-house pewter wells.

5,982 of 1908.—Hartley Hitchen: Ball-cocks for the supply of water and other liquids to cisterns and tanks.

9,707 of 1908.—Adolph Wunderlich and Gwylim Anwyl Hughes: Hoisting and lowering mechanism.

10,112 of 1908.—Adolf Detzner: Apparatus for demonstrating the atmospheric pressure.

* All these applications are in the stage in which opposition to the grant of patents upon them can be made.

11,455 of 1908.—George Alexander Wheeler: Moving stairways.

12,792 of 1908.—Cajus Hermansen: Domestic firegrates.

12,870 of 1908.—William Henry Francis: Methods of transporting bricks and the like.

13,918 of 1908. — Richard Henderson: Windows.

19,449 of 1908.—Joseph Storey Tilling: Means for attaching window blinds and the like to rollers.

19,969 of 1908.—Thomas Lucas: Window-blind roller fittings.

20,013 of 1908.—Pedro Zerbino: Sliding gates.

21,666 of 1908.—Rudolf Schori: Scraper for cleaning ceilings and walls.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

January 29.—By G. B. HILLIARD & SON (at Chelmsford).

Chelmsford.—Roxwell-rd., freehold farmery and garden ground, 4 a. 3 r. 8 p., y.r. 25*l.* £660
A freehold cottage and garden, w.r. 13*l.* 300
Railway-st., freehold corner plot 230
Hatfield Peverel.—Freehold cottage and garden, gross rent 6*l.* 10*s.* 130

February 2.—By RUTLEY, SON, & VINE.

Holloway.—Tabley-rd., f.g. rents 28*l.* 7*s.*, reversion in 57 yrs. 710

By STANLEY PARKES & BROWN.

Enfield.—Carterhatch-rd., Oatlands Nursery, area 6 a., f. 2,200

February 3.—By NORRIS, HADLEY, & CO.

Hampstead.—1, Aldred-rd., u.t. 78 yrs., g.r. 6*l.* 10*s.*, e.r. 45*l.* 450
High Holborn.—No. 155 (s.), beneficial lease for 7½ yrs. at 70*l.*, w.r. 188*l.* 10*s.* 155

By T. NEALE & SON (at Nottingham).

Nottingham.—8 and 10, Baker-st., f. 1,370

February 4.—By BISLEY & SONS.

Bermondsey.—107, Grange-rd., f., e.r. 75*l.* 950
1 and 2, Frean-st., u.t. 22¾ yrs., g.r. 6*l.*, w.r. 71*l.* 10*s.* 280
266 to 272 (even), Rolls-rd., u.t. 30 yrs., g.r. 20*l.*, w.r. 139*l.* 2*s.* 680
Belvedere, Kent.—37 and 38, Woolwich-rd., f., w.r. 41*l.* 12*s.* 360

By NEWBON, SHEPHARD, & EDWARDS.

Islington.—199 and 200, Upper-st. (s.), f., y.r. 280*l.* 3,500
248, Upper-st. (s.), and stabling, f., p. and w.r. 41*l.* 8*s.* 2,000
Upper East Smithfield.—Nos. 46 and 47 (s.), f., y.r. 90*l.* 1,250
Barnsbury.—129, 131, and 133, Barnsbury-rd. (s.), f., y.r. 140*l.* 1,535
135 to 141 (odd), Barnsbury-rd., f., y.r. 177*l.* 1,690
Balls Pond.—85, Balls Pond-rd. (s.), f., y.r. 50*l.* 575
87 to 93 (odd), 97, 101, and 103, Balls Pond-rd., f., y.r. 196*l.* 2,125
115, Balls Pond-rd. (s.), f., y.r. 36*l.* 400

By STIMSON & SONS.

Anerley.—Anerley-pk., f.g. rents 45*l.*, reversion in 211 yrs. 905
Walworth.—Montpelier-st., f.g. rents 4*l.* 4*s.*, reversion in 6 yrs. 700
53 and 55, Olney-st., f., w.r. 75*l.* 8*s.* 600
Catford.—Torridon-rd., f.g.r. 9*l.* 16*s.*, reversion in 93 yrs. 220

By GRIMLEY & SON (at Birmingham).

Solihull, Warwick. — Peterborough-rd., Tile House Farm, 44 a., f. 4,300
Saltley, Warwick.—2 to 8 (even), Chartist-rd., u.t. 90 yrs., g.r. 10*l.* 10*s.*, w.r. 67*l.* 12*s.* 445
11 and 12, Upper Cox-st., u.t. 61 yrs., g.r. 12*l.*, w.r. 66*l.* 6*s.* 440

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent: av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.	
Best Stocks	1	6	0	per 1000 alongside, in river.
Picked Stocks for Facings	2	10	0	,, delivered
Flettons	1	4	0	,, at railway depôt.
Best Fareham Red	3	12	0	,, ,, ,,
Best Red Pressed Ruabon Facing	5	0	0	,, ,, ,,
Best Blue Pressed Staffordshire	3	15	0	,, ,, ,,
Do. Bullnose	4	0	0	,, ,, ,,
Best Stourbridge Fire Bricks	3	14	0	,, ,, ,,
GLAZED BRICKS.				
Best White and Ivory Glazed Stretchers	10	7	6	,, ,, ,,
Headers	9	17	6	,, ,, ,,
Quoins, Bullnose, and Flats	13	17	6	,, ,, ,,
Double Stretchers	15	17	6	,, ,, ,,
Double Headers	12	17	6	,, ,, ,,

BRICKS, &c. (*continued*).

GLAZED BRICKS (*continued*).

	£	s.	d.	
One Side and two Ends	16	17	6	per 1000, deld. at rly. depôt.
Two Sides and one End	17	17	6	,, ,, ,,
Splays, Chamferred, Squints	15	10	0	,, ,, ,,
Best Dipped Salt Glazed Stretchers	10	7	6	,, ,, ,,
Headers	9	17	6	,, ,, ,,
Quoins, Bullnose, and Flats	13	17	6	,, ,, ,,
Double Stretchers	15	17	6	,, ,, ,,
Double Headers	12	17	6	,, ,, ,,
One Side and two Ends	16	17	6	,, ,, ,,
Two Sides and one End	17	17	6	,, ,, ,,
Splays, Chamferred, Squints	15	10	0	,, ,, ,,
Second Quality White and Dipped Salt Glazed	1	5	0	,, less than best.

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	,, ,,
Best Portland Cement	28	0	per ton, ,,
Best Ground Blue Lias Lime	19	0	,, ,,

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11*s.* 6*d.* per yard, delivered
Stourbridge Fireclay in sacks 27*s.* 0*d.* per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	,, ,,
PORTLAND STONE (20 ft average)—			
Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	,, ,,
White Pasebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	,, ,,

	s.	d.	
Ancester in blocks	1	10	per ft. cube. deld. rly. depôt.
Beer ,,	1	6	,, ,,
Greenshill ,,	1	10	,, ,,
Darley Dale in blocks	2	4	,, ,,
Red Corsehill ,,	2	2	,, ,,
Closeburn Ree Freestone	2	0	,, ,,
Red Mansfield ,,	2	4	,, ,,

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks	2	10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. ,,
6 in. rubbed two sides ditto, ditto	2	6	,, ,,
3 in. sawn two sides slabs (random sizes)	0	11½	per ft. cube. ,,
2 in to 2½ in. sawn one side slabs (random sizes)	0	7½	,, ,,
1½ in. to 2 in. ditto, ditto	0	6	,, ,,
HARD YORK—			
Scappled random blocks	3	0	,, ,,
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft. super. ,,
6 in. rubbed two sides ditto	3	0	,, ,,
3 in. sawn two sides slabs (random sizes)	1	2	,, ,,
2 in. self-faced random flags	0	5	,, ,,

SLATES.

In.	In.	£	s.	d.	
20×10	best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12	,, ,,	13	17	6	,, ,,
20×10	first quality ,,	13	0	0	,, ,,
20×12	,, ,,	13	15	0	,, ,,
16×8	,, ,,	7	5	0	,, ,,
22×10	best blue Portmadoc	12	12	6	,, ,,
16×8	,, ,,	6	12	6	,, ,,
20×10	best Eureka unfading green	15	17	6	,, ,,
20×12	,, ,,	18	7	6	,, ,,
18×10	,, ,,	13	5	0	,, ,,
16×8	,, ,,	10	5	0	,, ,,
20×10	permanent green	11	12	6	,, ,,
18×10	,, ,,	9	12	6	,, ,,
66×8	,, ,,	6	12	6	,, ,,

TILES.

	£	s.	d.	
Best plain red roofing tiles	42	0		per 1000, at rly depôt.
Hip and Valley tiles	3	7		per doz. ,,
Best Broseley tiles	50	0		per 1000 ,,
Do. Ornamental tiles	52	6		,, ,,
Hip and Valley tiles	4	0		per doz. ,,
Best Ruabon red, brown, or brindled do. (Edwards)	57	6		per 1000 ,,
Do. Ornamental do.	60	0		,, ,,
Hip tiles	4	0		per doz. ,,
Valley tiles	3	0		,, ,,
Best Red or Mottled Staffordshire do. (Peakes)	51	9		per 1000 ,,
Do. Ornamental do.	54	6		,, ,,
Hip tiles	4	1		per doz. ,,
Valley tiles	3	8		,, ,,
Best "Rosemary" brand plain tiles	48	0		per 1000 ,,
Best Ornamental tiles	50	0		,, ,,
Hip tiles	4	0		per doz. ,,
Valley tiles	3	8		,, ,,
Best "Hartshill" brand plain tiles, sand-faced	50	0		per 1000 ,,
Do. pressed	47	6		,, ,,
Do. Ornamental do.	50	0		,, ,,
Hip tiles	4	0		per doz. ,,
Valley tiles	3	6		,, ,,

TILES (*continued*).

	s.	d.	
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 at rly. depôt.
Hand-made sand-faced	45	0	,, ,,
Hip tiles	4	0	per doz. ,,
Valley tiles	3	6	,, ,,

WOOD.

BUILDING WOOD.	At per standard. £	s.	d.	£	s.	d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	13	10	0	15	0	0
Deals: best 3 by 9	13	0	0	14	0	0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.		
Deals: seconds	1	0	0	less than best		
Battens: seconds	0	10	0	,,		
2 in. by 4 in. and 2 in. by 6in.	9	0	0	10	0	0
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	9	10	0
Foreign Sawn Boards—						
1 in. and 1¼ in by 7 in.	0	10	0	more than battens		
¼ in.	1	0	0	,,		
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	4	15	0

JOINERS' WOOD.	At per standard. £	s.	d.	£	s.	d.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	25	0	0
3 in. by 9 in.	22	0	0	23	0	0
Batten 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0
White Sea: second yellow deals, 3 in. by 1 in.	18	10	0	20	0	0
3 in. by 9 in.	17	10	0	19	0	0
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0
Petersburg first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0
Do. 3 in. by 9 in.	18	0	0	19	10	0
Battens	13	10	0	15	0	0
Petersburg second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0
Do. 3 in. by 9 in.	14	10	0	16	0	0
Battens	11	0	0	12	10	0
Third yellow deals, 3 in. by 11 in.	13	0	0	14	0	0
Do. 3 in. by 9 in.	12	10	0	14	0	0
Battens	10	0	0	11	0	0
White Sea and Petersburg—						
First white deals, 3 in. by 11 in.	14	10	0	15	10	0
,, ,, 3 in. by 9 in.	13	10	0	14	0	0
Battens	11	0	0	12	0	0
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0
,, ,, 3 in. by 9 in.	12	10	0	13	10	0
Battens	10	0	0	11	0	
Pitch-pine: deals	18	0	0	21	0	
Under 2 in. thick extra	0	10	0	1	0	0
Yellow pine—First, regular sizes	44	0	0	upwards.		
Oddments	32	0	0	,,		
Seconds, regular sizes	33	0	0	,,		
Oddments	28	0	0	,,		
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0
Danzig and Stettin Oak logs—						
Large, per ft. cube	0	3	0	0	3	9
Small ,, ,,	0	2	6	0	2	6
Wainscot Oak Logs, per ft. cube	0	5	6	0	6	0
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	0	0	9½
¾ in. do. do	0	0	7	—		
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9	0	1	0
Selected, Figury, per ft. super. as inch	0	1	6	0	2	6
Dry Walnut, American, per ft. super, as inch	0	0	10	0	1	0
Teak per load	17	0	0	22	0	0
American Whitewood Planks, per ft. cube	0	4	0	0	5	0

Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	0
1 in. by 7 in. yellow, planed and matched	0	14	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. ,, ,,	0	14	0	0	18	0
¾ in. by 7 in. white ,, ,,	0	10	0	0	11	6
1 in. by 7 in. ,, ,,	0	12	9	0	15	0

6 in. at 6d. to 9d. per square less than 7in.

JOISTS, GIRDER, &c.

	In London, or delivered Railway Vans, per ton. £	s.	d.	£	s.	d.
Rolled Steel Joists, ordinary sections	7	0	0	7	10	0
Compound Girders, ordinary sections	9	0	0	10	0	0
Steel Compound Stanchions	11	0	0	2	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0	10	0	0
Flitch Plates	9	0	0	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0	8	10	0

METALS.

	Per ton, in London. £	s.	d.	£	s.	d.
IRON—						
Common Bars	8	10	0	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	9	5	0
Staffordshire "Marked Bars"	10	10	0	—		
Mild Steel Bars	8	15	0	9	5	0
Hoop Iron, basis price	9	5	0	9	10	0
,, ,, Galvanised	17	0	0	—		

(*And upwards, according to size and gauge.)

METALS (*continued*).

IRON (*continued*)—	Per ton, in London. £	s.	d.	£	s.	d.
Sheet Iron Black—						
Ordinary sizes to 20 g.	9	15	0	...		—
" " 24 g.	10	15	0	...		—
" " 26 g.	12	5	0	...		—
Sheet Iron, Galvanized, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15		0	...		—
Ordinary sizes to 22 g. and 24 g.	15	10	0	...		—
" " 26 g.	1	10	0	...		—
Sheet Iron, Galvanized, flat, best quality—						
Ordinary sizes to 20 g.	18	0	0	...		—
" " 22 g. and 24 g.	18	10	0	...		—
" " 26 g.	20	0	0	...		—
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0	...		—
" " 22 g. and 24 g.	14	15	0	...		—
" " 26 g.	16	5	0	...		—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12	0	0	...		—
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0	...		—
" " 26 g.	15	0	0	...		—
Cut Nails, 3 in. to 6 in.	10	10	0	...	11	0 0

(Under 3 in., usual trade extras.)

LEAD, &c.	Per ton, in London. £	s.	d.	£	s.	d.
LEAD—Sheet, English, 3lb. and up.	16	10	0	...		—
Pipe in coils	17	0	0	...		—
Soil pipe	19	0	0	...		—
Compo pipe	20	0	0	...		—
ZINC—Sheet—						
Vielle Montagne ton	26	10	0	...		—
Silesian	26	5	0	...		—
COPPER—						
Strong sheet per lb.	0	1	0	...		—
Thin " "	0	1	1	...		—
Copper nails "	0	0	10	...		—
Copper wire "	0	0	10	...		—
BRASS—						
Strong Sheet "	0	0	11	...		—
Thin "	0	1	0	...		—
TIN—English Ingots "	0	1	5	...		—
SOLDER—Plumbers "	0	0	7	...		—
Tinmans "	0	0	9½	...		—
Blowpipe "	0	1	0	...		—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3d. " "
" fourths	2¼d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4½d " "
" fourths	4¼d. " "
Fluted Sheet, 15 oz	3¼d. " "
" 21 oz.	4¼d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2¼d. per ft. delivered.
⅜ "	2⅝d. " "
½ "	2⅞d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "
OTHER GLASS—	
"Arctic" Glass, white	3½d. " "
" " tinted	5d. " "
" " Ruby and opalescents	1s. " "

OILS, &c.		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	1	11
" " " in barrels	"	0	2	0
" " " in drums	"	0	2	3
Boiled " " in barrels	"	0	2	3
" " " in drums	"	0	2	6
Turpentine in Barrels	"	0	2	7
" in drums	"	0	2	9
Genuine Ground English White Lead	per ton	21	0	0
Red Lead, Dry	"	20	0	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.	Per gallon.		
Fine Pale Oak Varnish	0	8	0
Pale Copal Oak	0	10	6
Superfine Pale Elastic Oak	0	12	6
Fine Extra Hard Church Oak	0	10	0
Superfine Hard-drying Oak, for seats of Churches	0	14	6
Fine Elastic Carriage	0	12	0
Superfine Pale Elastic Carriage	0	16	0
Fine Pale Maple	0	16	0
Finest Pale Durable Copal	0	18	0
Extra Pale French Oil	1	1	0
Eggshell Flating Varnish	0	18	0
White Pale Enamel	1	4	0
Extra Pale Paper	0	12	0
Best Japan Gold Size	0	10	6
Best Black Japan	0	16	0
Oak and Mahogany Stain	0	9	0
Brunswick Black	0	8	0
Berlin Black	0	16	0
Knotting	0	10	9
French and Brush Polish	0	10	6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcement of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted*

ABBEY MILLS.—For delivery of sluice valves on main engines at Abbey Mills pumping-station, for the London County Council:—

Thames Iron Works, etc., Co., Ltd.	£710 0 0
Flavell & Churchill	590 0 0
Hunter & English, Ltd.	579 0 0
Seagers, Ltd., Dartford*	525 0 0

BOURNEMOUTH.—For making-up Oxford-avenue (first portion), for the Borough Council. Mr. F. W. Lacey, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Offices, Bournemouth:—

Graunds & Newton, Richmond chambers, Bournemouth* £156 3 1

BOURNEMOUTH.—For making-up Frederica-road, for the Borough Council. Mr. F. W. Lacey, M.Inst.C.E., Borough Engineer and Surveyor, Municipal Offices, Bournemouth:—

M. Loader, Green-road, Bournemouth* .. £225 5 8

BRISTOL.—For erecting a new Sunday school, for the trustees of the Primitive Methodist chapel. Mr. T. Melhuish, architect, 4, Gt. Ostry, Shepton Mallett:—

J. Bird & Son, Frome-hill, Radstock* £360 0 0

CAMBRIDGE.—For post-office extension:—

W. Bell & Sons	£3,997	H. Smith	£3,080
Carter & Wright ..	3,742	W. J. Fryer & Co.*	2,788
A Negus & Sons	3,399		

CHEAM.—For making-up Frederick-road, Cheam, for Epsom Rural District Council. Mr. T. E. Ware, Surveyor of Highways, Waterloo-road, Epsom:—

H. M. Blaker..	£367 0 0	F. Potter	£315 0 0
E. & E. Iles ..	349 0 0	G. W. Aedy ..	293 16 10
W. H. Wheeler & Co., Ltd...	332 0 0	A. J. Streeter & Co., Shalford, near Guildford* ..	277 3 2
J. May	325 0 0		
S. Kavanagh ..	317 0 0		

CHILCOMBE.—For erecting a coachman's cottage at Chilcombe, Bicknoller, near Williton, for the Rev. C. Martin. Mr. F. W. Roberts, F.R.I.B.A., 2, Hammet-street, Taunton. Quantities not supplied:—

A. Jennings ..	£438 10 6	Hunt & Son ..	£324 10 0
J. Chibbett & Sons.....	354 0 0	J. H. Spear, Kingston, Taunton* ..	300 0 0
T. Manning & Son	348 0 0		

DARTFORD.—For shaping out roads and kerbing, etc., drainage, etc., for Mr. W. P. Bleeze, Bromley. Messrs. Tait & Hobbs, architects, surveyors and engineers, Lowfield-street, Dartford. Quantities by Mr. John Hobbs:—

T. Knight	£1,020 0 0
Pedrette & Co.	922 6 9
G. Rayner	911 0 2
T. Wood & Sons	894 16 3
Parsons & Parsons	853 17 5
G. Bell & Sons Ltd.	819 0 0
J. Lonsdale	769 0 0
J. W. Ellingham	768 0 0
J. Jackson	764 8 6
W. H. Wheeler	753 9 0
E. Bate & Co.	722 17 6
J. Trueman Ltd.	719 0 0
A. E. Price, Rochester‡	700 0 0

‡ Recommended for acceptance.

DUDLEY.—For post-office enlargement:—

		Cr.
G. H. Marshall	£8,303 0 0	£143
J. Dalton & Sons	8,135 0 0	150
Kendrick & Sons	7,908 0 0	90
W. E. Blake	7,850 0 0	150
J. Herbert	7,860 0 0	200
H. Smith	7,732 0 0	109
W. Deeley	7,645 0 0	130
M. Round & Sons	7,650 0 0	150
F. L. Jones	7,625 0 0	235
H. Dorse	7,409 18 10	125
Oakley & Coulson	7,447 0 0	226
J. Barnsley & Sons*	7,146 0 0	150

GLANTON.—For 738 yds. of 4 in. cast-iron water-pipes, etc., for Alnwick Rural District Council. Mr. M. Temple Wilson, Sanitary Inspector, Alnwick:—

Wilkin & Dickman, Glanton* £183 18 0

HARROGATE.—For painting the Kursaal and Spa Concert-Rooms, etc., for the Corporation:—

Exterior.

Broadbank & Son, Oxford-street, Harrogate* .. £64

Interior.

Noddings & Son, 87, Walker-road* £31

KENFIG HILL.—For erecting two shops and a dwelling house, Evans-street, for Mr. T. Nicholas. Mr. Aneuryn T. James, architect and surveyor, 23, Station-road, Port Talbot:

J. Davies	£789 0 0
Price Bros.	667 7 4½
Thomas Bros., Maesteg*	598 0 0

LONDON.—For the erection of a Police Section House at Yeoman's-row, Walton-street, S.W. Mr. J. Dixon Butler, F.R.I.B.A., Architect and Surveyor to the Metropolitan Police, New Scotland-yard, S.W. Quantities by Messrs. Thurgood, Son, & Chidgey, 8, Adelphi-terrace, Strand, W.C.:—

C. Ansell	£7,000	Lovatt, Ltd.	£6,444
McCormick & Son ..	6,750	Leslie & Co., Ltd..	6,376
Harris & Wardrop	6,743	Mowlem & Co., Ltd.	6,349
Shurmur & Son	6,660	F. & H. F. Higgs ..	6,340
Holloway Bros., Ltd.	6,570	Ashby & Horner ..	6,263
Willmott & Sons ..	6,559	Prestige & Co., Ltd.	6,175
Higgs & Hill, Ltd..	6,484		

LONDON.—For covering in the open areas at No. 34, Old Jewry, and No. 1, Frederick's-place, for the Corporation:—

J. Mowlem and Co., Ltd.	£310	T. Stevens	£119
Patman & Fotheringham	145	W. Smith & Son*	98

MARKET DRAYTON.—For erecting a new secondary school, for Salop County Council Higher Education Committee. Mr. J. Holt, A.R.I.B.A., 9, Albert-square, Manchester:—

J. Dallow & Sons, Blackheath, Birmingham.. £5,340

MILTON, PORTSMOUTH.—For erecting quarters for assistant medical officers, medical officer's residence, and extension of Nurses' Home at the Workhouse Infirmary, for Portsmouth Guardians. Messrs. Rake & Cogswell, Architects, Prudential Buildings, Commercial-road, Portsmouth:—

Sperring	£6,370	J. Tanner	£5,900
H. Jones	6,590	M. Coltherup	5,750
A. E. Porter	6,455	F. Corke	5,689
Dowdell & Co.	6,154	F. J. Privett, Cottage-grove, Southsea*	5,267
E. & W. G. Payne..	6,125		
Light & Son	5,992		
J. Crockerell	5,921		

MONKSEATON.—For laying a 12-in. pipe sewer, for Whitley and Monkseaton Urban District Council. Mr. A. J. Rousell, A.M.Inst.C.E., Surveyor, Council Offices, Whitley Bay:—

G. Thornton & Co., South Shields.. £1,097 0 0

PENCISLEY.—For earthenware pipe sewers, for Llandaff and Dinas Powis Rural District Council. Mr. J. Holden, Engineer, Park House, 20, Park-place, Cardiff:—

C. Sayers	£3,304 0 7
R. Rankin	2,778 14 3
G. Pollard & Co., Ltd.	2,603 0 0
T. Taylor	2,552 3 4
G. Rutter	2,468 9 1
Barnes, Chaplin & Co., Ltd.	2,412 7 4
E. Osmond & Sons	2,271 1 1
H. Smith	2,247 11 5
C. Davies, 35, Court-road, Cardiff*	2,082 0 0

LONDON.—For external painting, etc., to cottages Nos. 35 to 68 (inclusive), Crozier-terrace, High-street, Homerton, N.E., for the Hackney Guardians:—

—	Time. Weeks.	Estimate "A." Repairs as per Specification "A" to Cottages, Nos. 5 to 66, Crozier-terrace. £	s.	d.	Estimate "B." Repairs as per Specification "A" to Cottages, Nos. 37 and 38, Crozier-terrace. £	s.	d.	Estimate "C." Repairs as per Specification "B" to Cottages, Nos. 37 and 38, Crozier-terrace. £	s.	d.	Total. £	s.	d.
J. Bent & Son	6	214	10	0	7	10	0	54	10	0	276	10	0
W. Bickerton	6	230	0	0	17	10	0	28	0	0	275	10	0
W. C. Bragg	16	424	2	7	25	2	2	51	0	0	500	4	9
Bush & Co.	12	225	0	0	20	0	0	50	0	0	295	0	0
G. Butters	10	449	0	0	34	0	0	48	0	0	531	0	0
J. Carr & Co.	6	250	0	0	28	0	0	150	0	0	428	0	0
Castle Bros.	8	505	0	0	91	5	0	19	19	0	616	4	0
C. Castle & Son	8	370	0	0	25	0	0	76	0	0	471	0	0
W. H. Goates	16	464	0	0	21	0	0	71	0	0	556	0	0
H. Dearsley & Son	7	200	0	0	9	17	0	37	0	0	246	17	0
Franks & Simons	—	200	0	0	9	0	0	51	0	0	260	0	0
C. S. Jones & Son	8	208	10	0	23	0	0	77	0	0	308	10	0
G. Keetch	7	228	0	0	22	0	0	28	0	0	278	0	0
C. J. Kemp	8	360	0	0	22	0	0	37	0	0	419	0	0
A. E. Lake	6	352	0	0	35	0	0	60	0	0	447	0	0
Limn & Co.	10		260	0	0			44	0	0	304	0	0
Lister & Co.	8	237	0	0	15	0	0	35	0	0	287	0	0
P. McCarthy	9	257	0	0	20	0	0	15	0	0	292	0	0
A. Perton	8	393	0	0	26	0	0	41	0	0	460	0	0
J. Ramsbotham	12	600	0	0	40	0	0	40	0	0	680	0	0
G. A. Rowley	10	200	0	0	15	0	0	45	0	0	260	0	0
W. Silk & Son	8	260	0	0	15	0	0	54	0	0	329	0	0
F. Smith & Co.	10	280	0	0	19	0	0	75	0	0	374	0	0
Stapleton & Sons	—	559	0	0	45	0	0	55	0	0	659	0	0
Vigor & Co.	14	248	10	0	23	10	0	48	0	0	320	0	0
J. Whitaker & Son	10	353	0	0	33	3	0	44	15	0	432	18	0
R. Woollaston & Co., 40, Turner's-road, Limehouse, E.	6	*120	0	0	8	0	0	30	0	0	158	0	0
W. Dennison	15		225	0	0			17	0	0	242	0	0

POWBURN.—For extending the main sewer, for Alnwick Rural District Council. Mr. M. Temple Wilson, Sanitary Inspector, Alnwick :—
T. B. Johnston, Glanton* £27 10 0

REDNAL.—For erecting a public reading-room, for King's Norton and Northfield Urban District Council. Mr. Benjamin Bower, architect, Temple-street, Birmingham. Quantities by Mr. George Kenwrick, Colmore-row, Birmingham :—

F. L. Gibbs	£852 4 7
J. Atkinson	678 0 0
G. E. Cragg & Son	620 0 0
W. Sapcote & Sons	620 0 0
W. Willetts & Sons	612 0 0
T. Johnson	587 0 0
R. Matthews	576 5 5
W. T. Ingram & Sons	558 0 0
J. E. Harper	552 17 8
A. R. Waldron, 202, Station-road, King's Heath*	545 10 0

WALTHAMSTOW.—For erecting higher elementary school on the Greenleaf-road site, for the Education Committee. Mr. H. Prosser, M.S.A., Architect to the Committee. Quantities by Mr. G. T. G. Wright, F.S.I., 3, Great Winchester-street, E.C. :—

Spencer, Santo, & Co.	£13,325	Kilby & Gayford	£12,531
F. & G. Foster	13,224	Rowley Bros.	12,468
F. J. Coxhead	13,178	R. & E. Evans	12,439
F. & A. Willmott	13,143	W. J. Maddison	12,429
J. Cracknell	13,018	B. E. Nightingale	12,265
J. & J. Dean	12,966	Hammond & Son	12,264
Appleby & Sons	12,720	Brand, Pettit, & Co.	11,835
Lowe & Co.	12,681	Knight & Son	11,744
H. J. Carter	12,598	G. J. Fisher	11,557
F. & E. Davey	12,555		

WREXHAM.—For removing the iron church at Hightown to a site about 100 ft. away, for Wrexham Church Extension Committee. Mr. G. Morison, architect, 4, Argyle-street, Wrexham :—
S. Sothern, Charles-street, Wrexham £100

SUTTON (near Southend-on-Sea).—For the erection and completion of new elementary schools for 160 children, for the Rochford District Sub-Committee of the Essex Education Committee. Mr. F. Whitmore, Architect, Chelmsford :—

—	Main Building.	Latrines, Drainage, Fencing, etc.	Total.
	£ s. d.	£ s. d.	£ s. d.
Davidson	1,797 16 7	746 17 9	2,544 14 4
Parron & Son	2,000 0 0	500 0 0	2,500 0 0
Moss	1,819 6 3	652 10 4	2,471 16 7
Brown Bros.	1,805 4 3	600 12 4	2,405 16 7
Dowsing & Davis	1,650 0 0	660 0 0	2,310 0 0
Jarvis	1,697 0 0	599 0 0	2,296 0 0
Beaumont	1,682 0 0	558 0 0	2,240 0 0
Ramsbottom & Co.	1,670 0 0	551 0 0	2,221 0 0
Bennett	1,650 0 0	550 0 0	2,200 0 0
Willmott	1,632 0 0	558 0 0	2,190 0 0
Hyde & Co.	1,562 0 0	610 0 0	2,172 0 0
E. & B. H. Davey	1,621 0 0	546 0 0	2,167 0 0
F. & E. Davey	1,637 0 0	500 0 0	2,137 0 0
Johnson & Hawkes	1,633 0 0	497 0 0	2,130 0 0
Pavitt & Son	1,587 16 0	539 11 6	2,127 7 6
Woodham	1,570 0 0	480 0 0	2,050 0 0
Norden, Rochford‡	1,482 10 0	435 10 0	1,918 0 0
Architect's estimate	1,570 0 0	430 0 0	2,000 0 0

‡ Recommended for acceptance.

THURNSCOE.—For sewage disposal works (alterations and improvements), for the Urban District Council. Mr. H. Smith, Engineer, Compton-buildings, Bow-street, Keighley :—
E. E. Dickinson, 36, Back-lane, Bolton-upon-Dearne, Rotherham £633

TIPTON.—For new sewage disposal works, for the Urban District Council. Messrs. Dodd & Dodd, engineers, 37, Waterloo-street, Birmingham :—

Brebner & Co.	£24,871 3 10
W. G. Swann	21,051 9 1
Byrom Ltd.	20,939 12 0
T. J. Mason	20,908 16 7
A. H. Price & Co.	20,156 18 4
H. Holloway	19,924 17 5
W. Underwood & Bros.	19,859 7 5
J. Wilson & Sons	19,771 0 0
J. Mackay	19,525 14 5
J. Guest & Sons	19,263 0 0
S. W. Harrison & Co.	18,952 16 9
Currall, Lewis, & Martin	18,873 5 0
G. Trentham	18,587 10 0
T. Vale & Sons	18,495 16 11
Johnson Bros.	18,224 0 0
G. P. Trentham	18,220 0 0
Firth & Co.	17,605 18 6
W. Cunliffe	17,557 5 0
G. Law	17,062 10 0
J. Owens	16,995 8 6
B. Firth, 81, Walker-road, Harrogate*	16,929 18 2

WALTHAMSTOW.—For supplying heating apparatus to the Selwyn-avenue Schools, for the Education Committee :—

Boyd & Sons	£558 0	Wontner - Smith, Gray, & Co.	£459 10
Dargue, Griffiths, & Co.	532 0	Haden & Sons	410 0
J. Grundy	493 0	W. Cassidy*	407 0
Palowkar & Sons	484 0	H. J. Cash & Co.	386 0
Werner, Pfleiderer, & Perkins	480 0	Kite & Co.	350 0
E. E. Logsdon	476 0	G. & E. Bradley	330 0

YORK.—For the erection of an iron mess-room at York, for the 2nd Yorkshire Regiment :—
F. Smith & Co., Stratford £272 10 0

YORK.—For erecting a temporary grand stand in the gardens of the Yorkshire Philosophical Society, for the Executive Committee of the York Historic Pageant. Mr. F. W. Spurr, City Engineer, Guildhall, York :—
Mr. W. Bellerby, Hungate Saw Mills, York .. £1,607

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